

LCD PROJECTION HDTV

V32/V32L CHASSIS



WD-52531

V32 Chassis

WD-52531

WD-62531

V32L Chassis

WD-62530



CAUTION:

Before servicing this chassis, it is important that the service person read the "SAFETY PRECAUTIONS" and "PRODUCT SAFETY NOTICE" contained in this manual.

SPECIFICATIONS

- | | |
|--|---|
| <ul style="list-style-type: none"> • Power Input : AC 120V, 60Hz • Power Usage : 225W • Light Engine : 3 LCD (1280 x 720 pixels) • Light Source : 132 Watts • Antenna Input : 2 RF 75Ω unbalanced • Tuning : 1 NTSC/ATSC/QAM • Cabinet Dimensions : [WD-52531]
33.1"(H) x 47.1"(W) x 16.9"(D)
: [WD-62530]
39.1"(H) x 55.9"(W) x 19.2"(D)
: [WD-62531]
39.1"(H) x 55.9"(W) x 19.2"(D) • Weight : [WD-52531]
82.5 lbs
: [WD-62530] [WD-62531]
99.3 lbs • Speakers (4 Ohms 10W) : 2-5 ½ x 2 ¼ inch | <ul style="list-style-type: none"> • Input Level : VIDEO IN JACK (RCA Type)
1.0Vp-p 75Ω unbalanced
: AUDIO IN JACK (RCA Type)
-4.7dBm 43kΩ unbalanced
: S-VIDEO IN JACK
(Y/C separate type)
Y: 1.0 Vp-p C: 0.286Vp-p (BURST)
75Ω unbalanced
: COMP / Y, Cr, Cb (RCA Type)
Y: 1.0 Vp-p Cr, Cb: 700mVp-p • Output Level : VIDEO OUT JACK (RCA Type)
1.0Vp-p 75Ω unbalanced
: AUDIO OUT JACK (RCA Type)
-4.7dBm 4.7kΩ unbalanced • Digital : AC-3 Digital Audio Output
(RCA Type)
: HDMI™ : Lead-Free solder PWBs |
|--|---|



• Design specifications are subject to change without notice.

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INTRODUCTION

This service manual provides service instructions for LCD Projection TV Models WD-52531 and WD-62531 using the V32 chassis, and WD-62530 using the V32L chassis.

This service manual includes:

1. Assembly and disassembly instructions for the front and rear cabinet components.
2. Servicing of the Lenticular Screen and Fresnel Lens.
3. Servicing down to major components, chassis, PWBs, Light Engine, Lamp Ballast, etc..
4. Electrical adjustments.
5. Optical Adjustments.
6. Lead Free Soldering.
7. Chip parts replacement procedures.
8. Simplified circuit path diagrams.

The parts list section of this service manual includes:

1. Cabinet and screen parts.
2. Electrical parts.

Block diagrams of the above listed models are included in this service manual for better understanding of the circuitry.

PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in television receivers have special safety related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc.

Replacement parts which have special safety characteristics are identified in this service manual.

Electrical components having such features are identified by shading on the schematic diagram and by bold type in the parts list of this service manual. **Therefore, the replacement for any safety part should be identical in value and characteristics.**



Solder

The PWBs used in the V32 chassis are constructed using Lead-Free solder. **When servicing use only recommended Lead-Free solder (refer to page 26).**

SAFETY PRECAUTIONS

NOTICE: Observe all cautions and safety related notes located inside the receiver cabinet and on the receiver chassis.

WARNING:

1. Operation of this receiver outside the cabinet or with the cover removed presents a shock hazard from the receiver's power supplies. Work on the receiver should not be attempted by anyone who is not thoroughly familiar with the precautions necessary when working on high voltage equipment.
2. When service is required, observe the original lead dress. Extra precaution should be taken to assure correct lead dress in the high voltage area. Where a short-circuit has occurred, replace those components that indicate evidence of overheating.

WARNING ... RISK OF EYE INJURY

Do not look into the light source, lens or mirror when operating the TV

Leakage current check

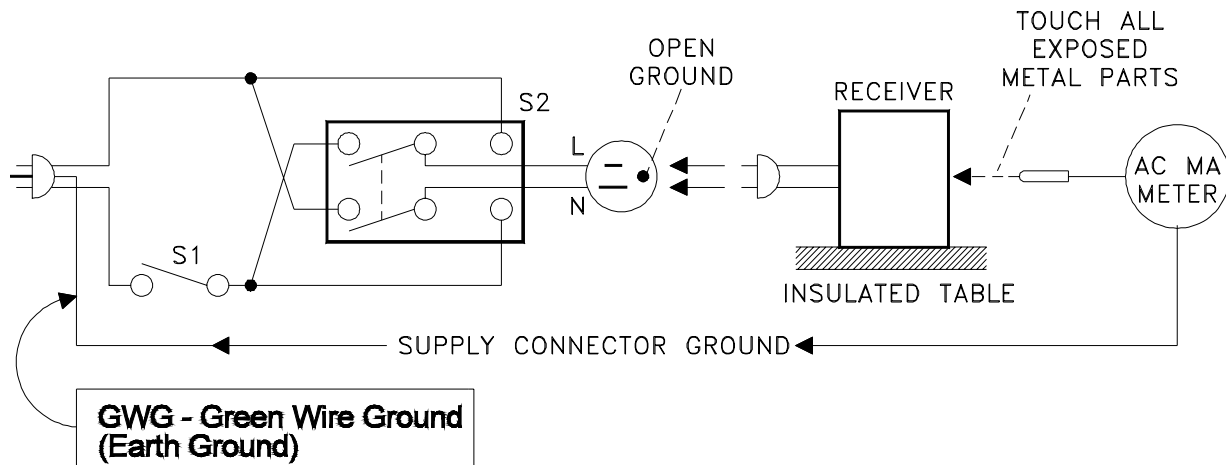
Before returning the receiver to the customer, it is recommended that leakage current be measured according to the following methods.

1. Cold Check

With the alternating current (AC) plug removed from the AC source, place a jumper across the two AC plug prongs. Connect one lead of an ohm meter to the AC plug and touch the other lead to each exposed metal part (i.e. antennas, handle bracket, metal cabinet, screw heads, metal overlay, control shafts, etc.), particularly any exposed metal part that has a return path to the chassis. The resistance of the exposed metal parts having a return path to the chassis **should be a minimum of 1Meg Ohm**. Any resistance below this value indicates an abnormal condition and requires corrective action.

2. Hot Check ...Use the circuit shown below to perform the hot check test.

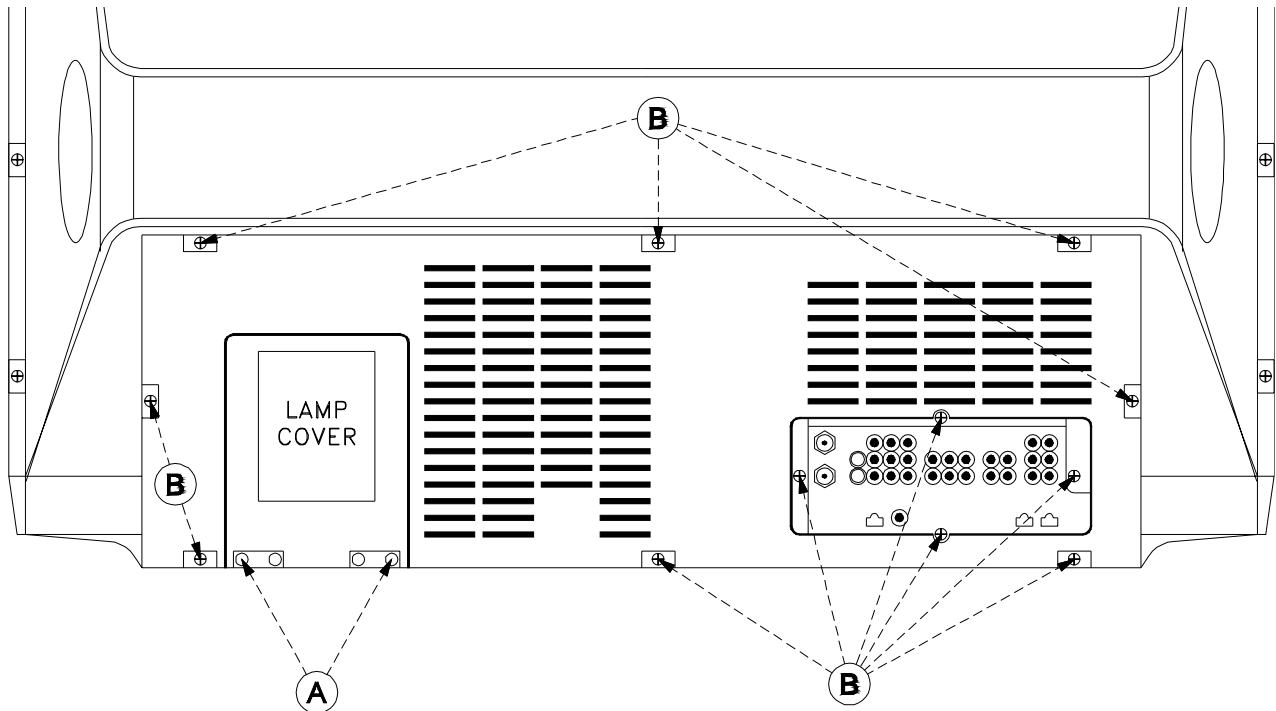
1. Keep switch S1 open and connect the receiver to the measuring circuit. Immediately after connection, and with the switching devices of the receiver in their operating positions, measure the leakage current for both positions of switch S2.
2. Close switch S1, energizing the receiver. Immediately after closing switch S1, and with the switching devices of the receiver in their operating positions, measure the leakage current for both positions of switch S2. Repeat the current measurements of items 1 and 2 after the receiver has reached thermal stabilization. **The leakage current must not exceed 0.5 milliampere (mA).**



BACK-COVER Removal

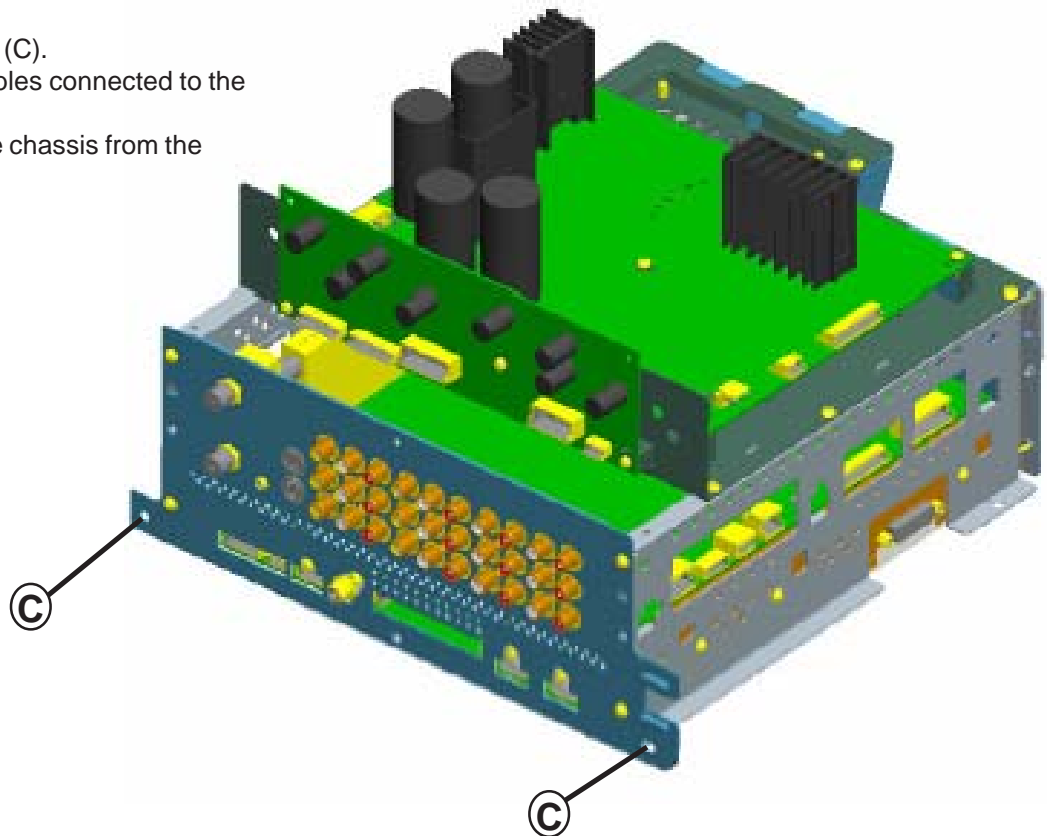
- 1) Remove 2 screws (A) to remove the Lamp Cover
- 2) Remove 12 screws (B).
- 3) Pull the COVER-BACK from the cabinet.

NOTE: To operate the TV the Lamp Cover must be reinstalled after the back cover is removed.



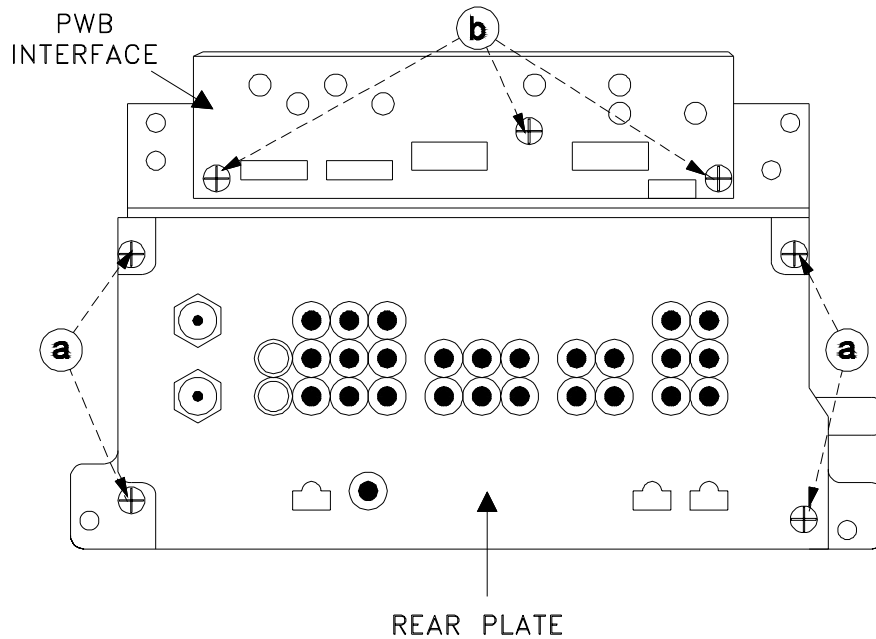
Chassis Removal

- 1) Remove 2 screws (C).
- 2) Disconnect all cables connected to the chassis.
- 3) Carefully slide the chassis from the cabinet



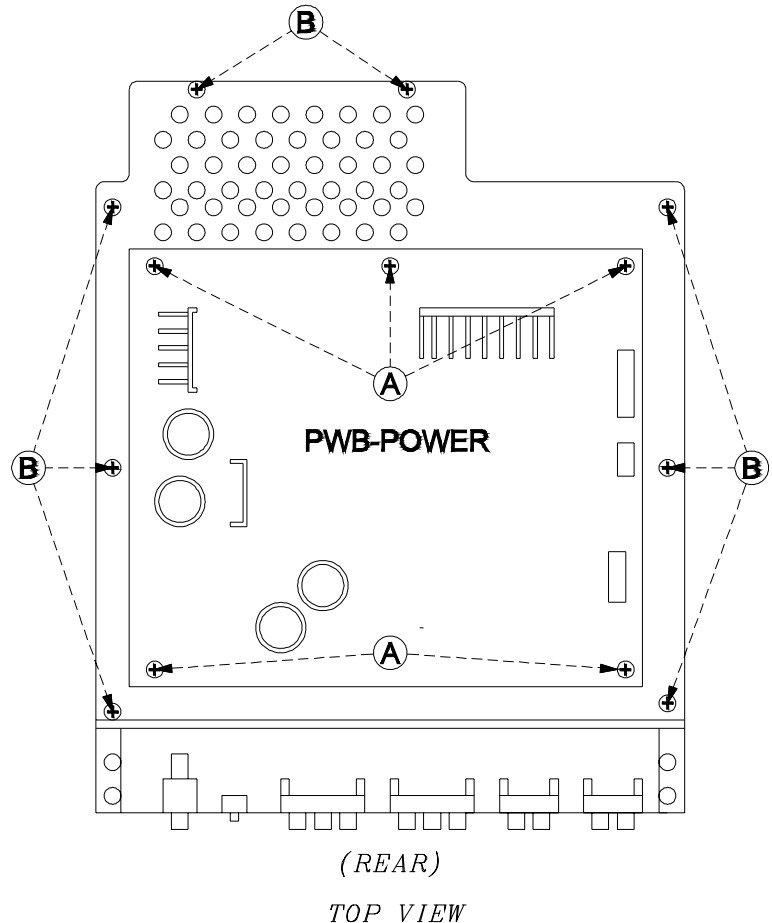
Rear Plate & PWB-INTERFACE Removal

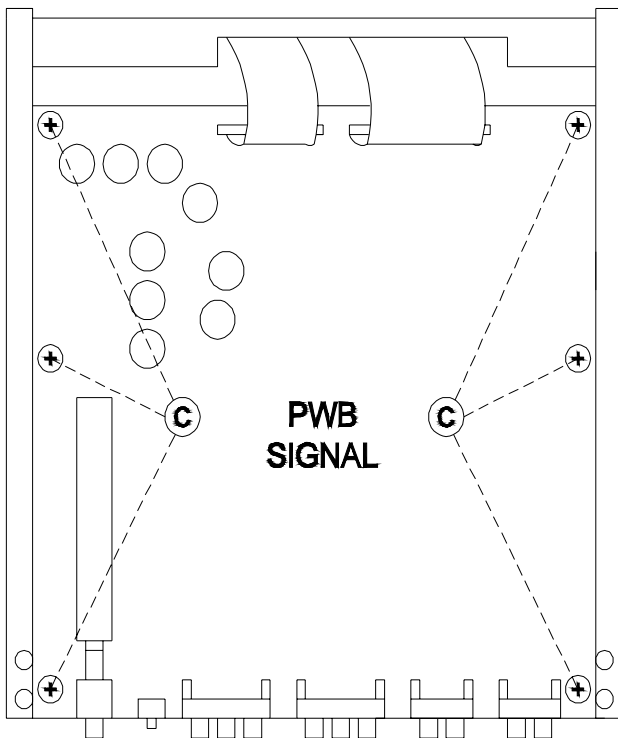
- 1) Remove 4 screws (a) and pull off the rear plate.
- 2) Remove 3 screws (b) to remove the PWB-INTERFACE



PWB-POWER & Power Bracket Removal

- 1) Remove 4 screws (A) and lift PWB-POWER from the chassis.
- 2) Remove 8 screws (B) to remove the Power Bracket.

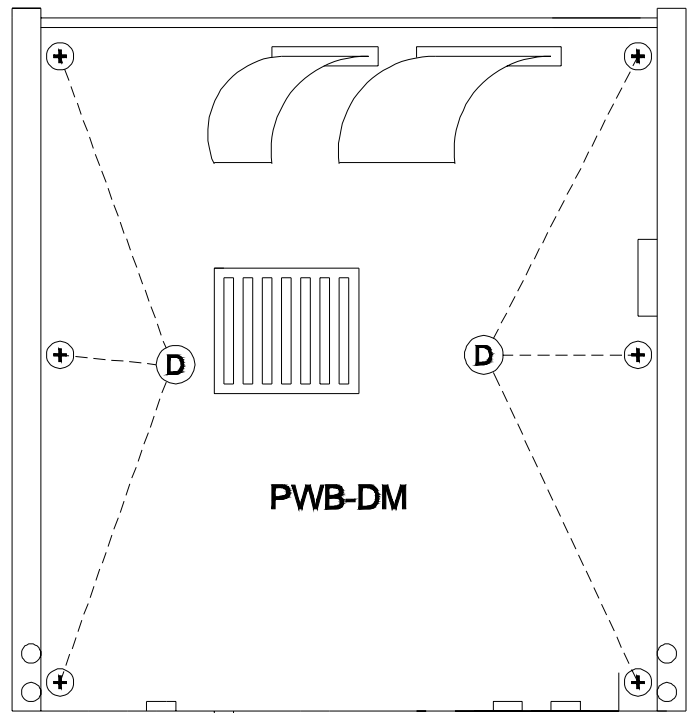




PWB-SIGNAL Removal

- 1) Remove 6 screws (c).
- 2) Unplug all connecting cables.
- 3) Remove PWB-SIGNAL

If PWB-SIGNAL is replaced, see page 22 to perform "Download WB Data to FMT"



(REAR)

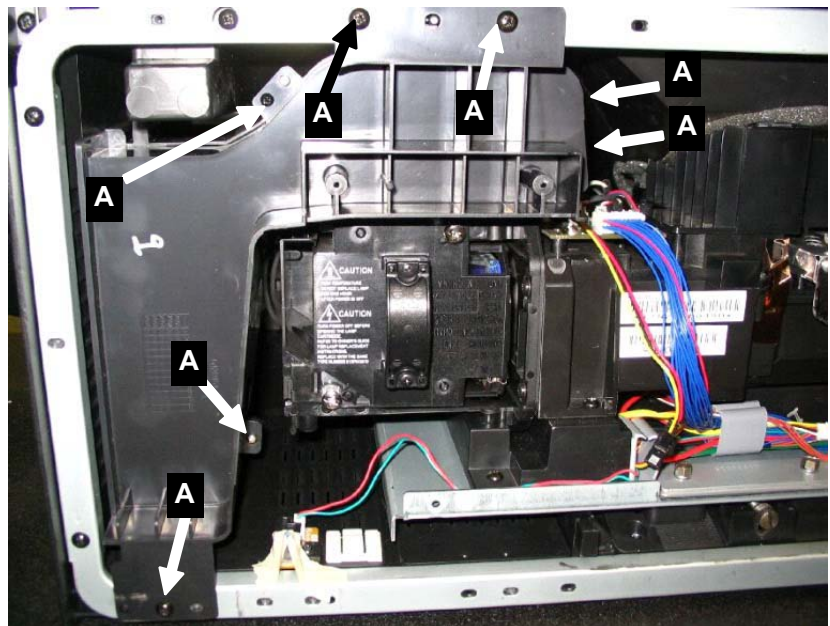
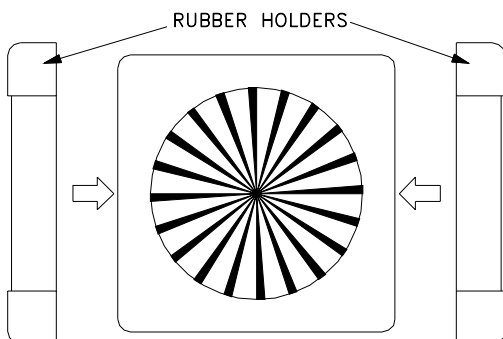
PWB-DM Removal

- 1) Remove 6 screws (D).
- 2) Unplug all connecting cables.
- 3) Lift PWB-DM from the chassis.

If PWB-DM is replaced, see page 22 to perform "Copy Light Engine E2PROM to DM"

Exhaust Fan Replacement

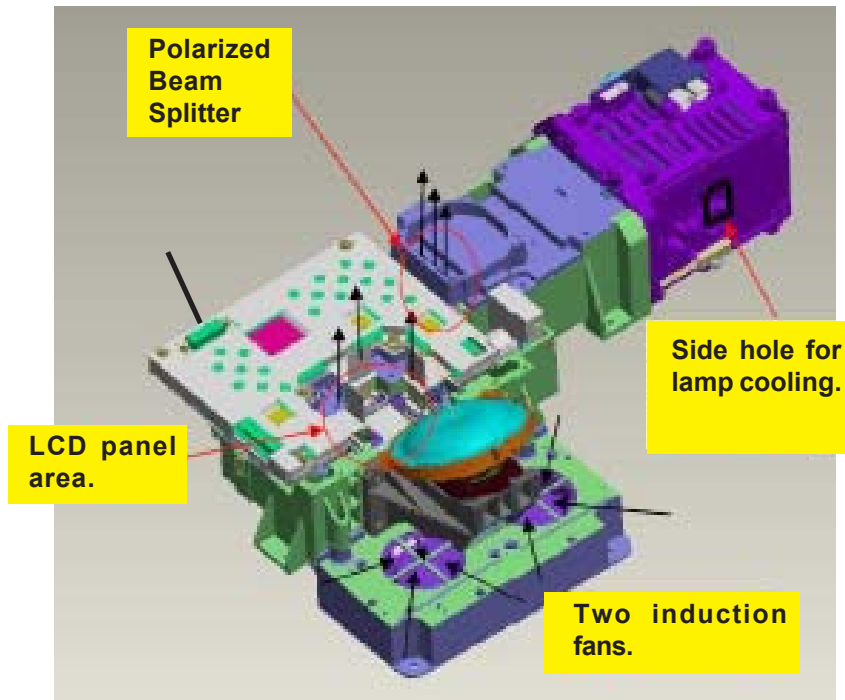
- 1) Remove 7 screws (A) to remove the lamp duct rear cover.
- 2) Slide the Exhaust Fan from the duct and unplug the JF connector. Remove the rubber fan holders, they do not come with the replacement fan.
- 3) When installing the fan insert the fan in the removed cover first.
- 4) Insure the leads come out the bottom of the fan and the label on the fan is facing upwards.



Light Engine Replacement

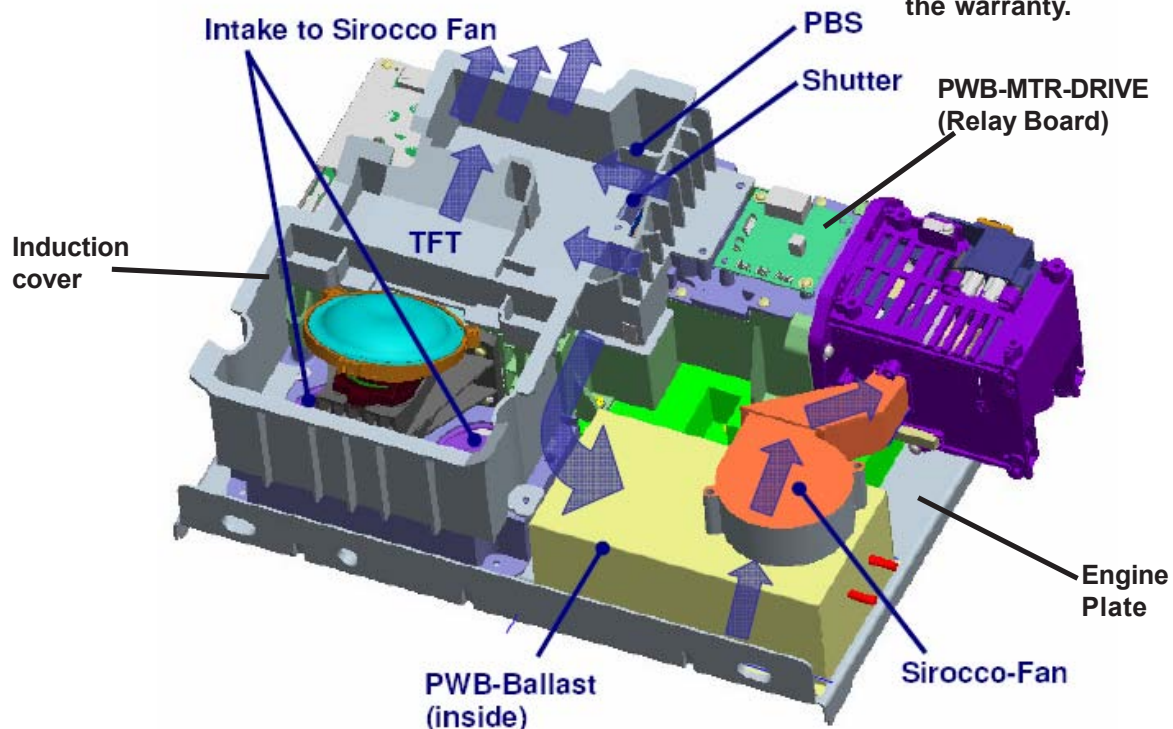
Light Engine and Associated Components

The picture below shows the LCD Engine without added components, and the bottom picture shows the added components and the Engine mounted on the Engine Plate.



LCD Engine

Note: The Engine has no individual service parts available. Attempting to disassemble the Engine may void the warranty.

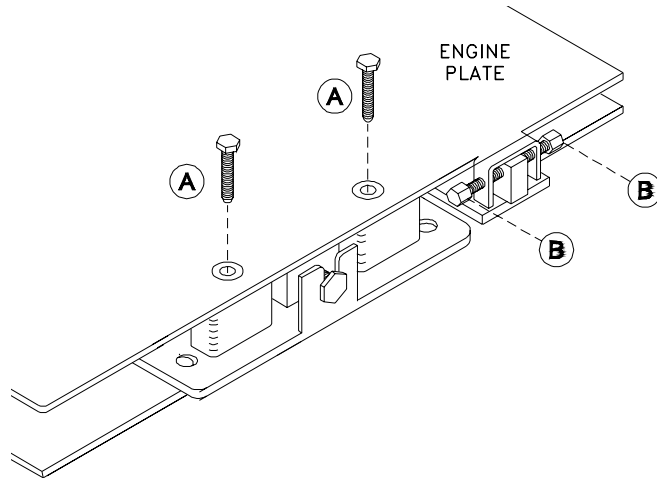


LCD Engine on engine plate

Light Engine & Engine Plate removal from the Cabinet

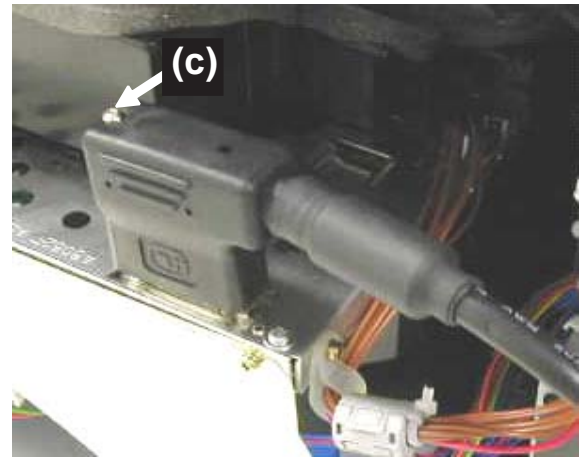
Preliminary

Refer to the chassis removal procedure and remove the BACK-COVER.



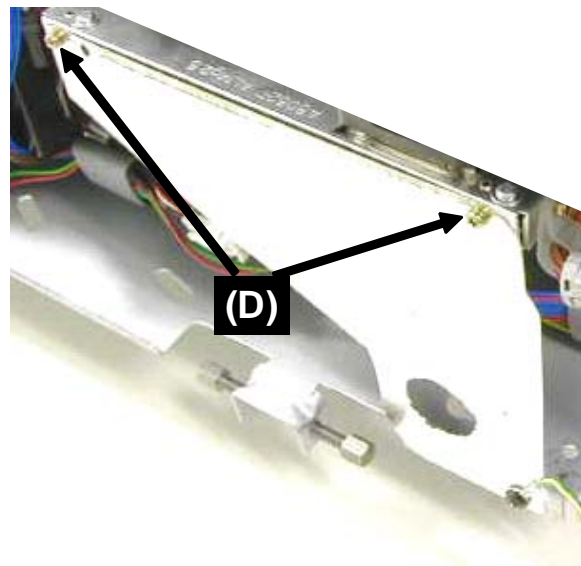
Removal Procedure

- 1) Remove the 2 locking screwss (A).
- 2) Loosen one (B) adjustment screw.
(With only one (B) screw loose less adjustment is required when installing a new Engine.)
- 3) Partially slide the Engine and bottom plate out of the cabinet.
- 4) Loosen screw (C) and unplug the DVI cable from the Engine.
- 5) Disconnect all leads to the Engine, Lamp Box and Ballast.
- 6) Carefully slide the Engine and bottom plate from the cabinet.



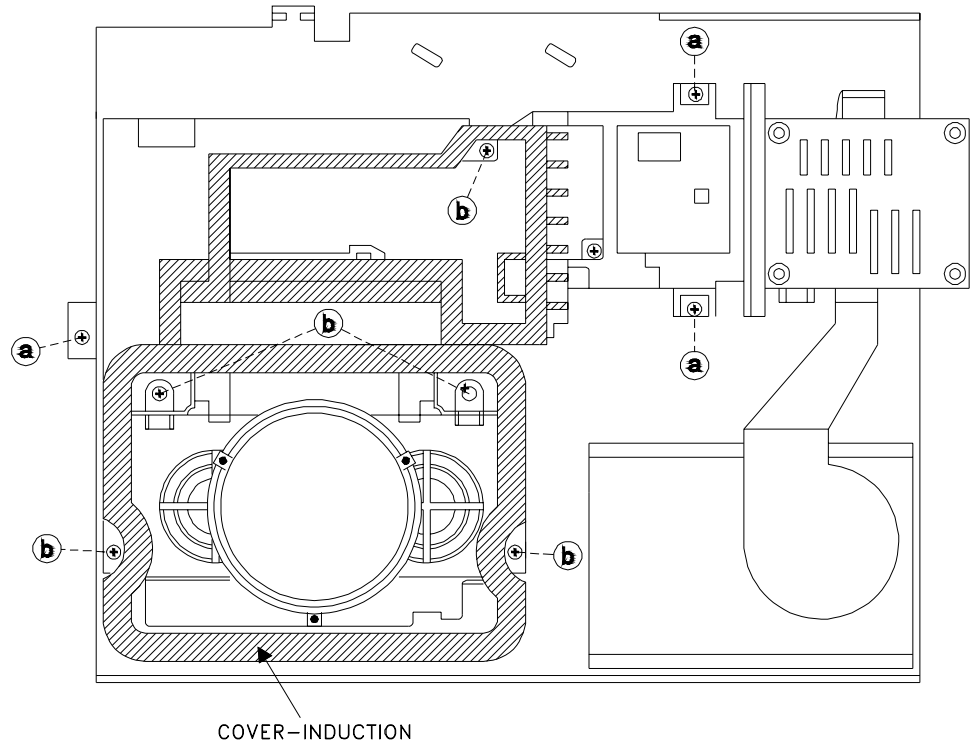
Light Engine removal from the Bottom Plate

- 1) Remove 2 screws (D) secure the support plate to the Engine.



Light Engine removal from the Bottom Plate (continued)

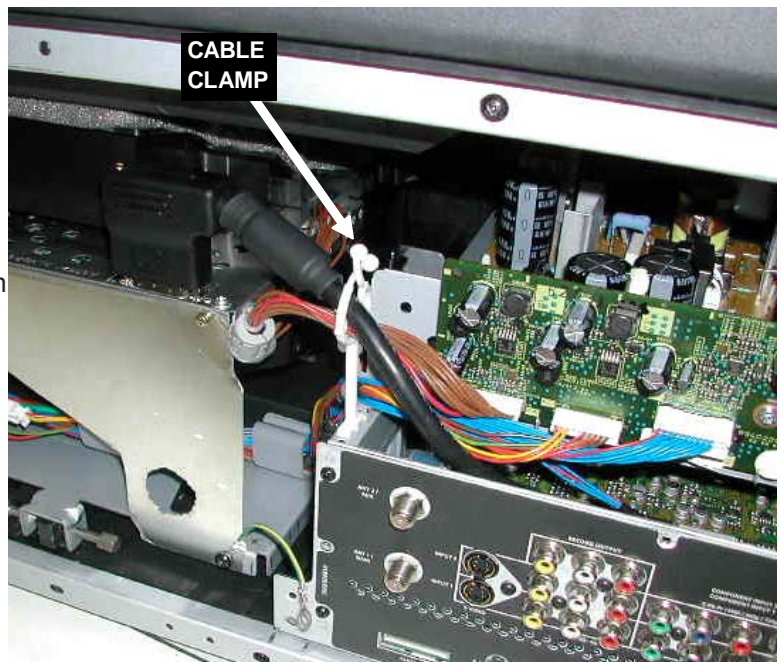
- 2) To remove the Engine from the bottom plate, remove 3 screws (a), and carefully lift the Engine from the bottom plate.
- 3) To remove the COVER-INDUCTION from the Engine 5 screws (b).



Light Engine Installation

- 1) Reverse the removal procedure to install a new light engine.
- 2) Tighten the DVI cable screw to 2-4 kgfcm.
- 3) Route the DVI cable and the KA-CN201 leads through the cable clamp as shown on the right.

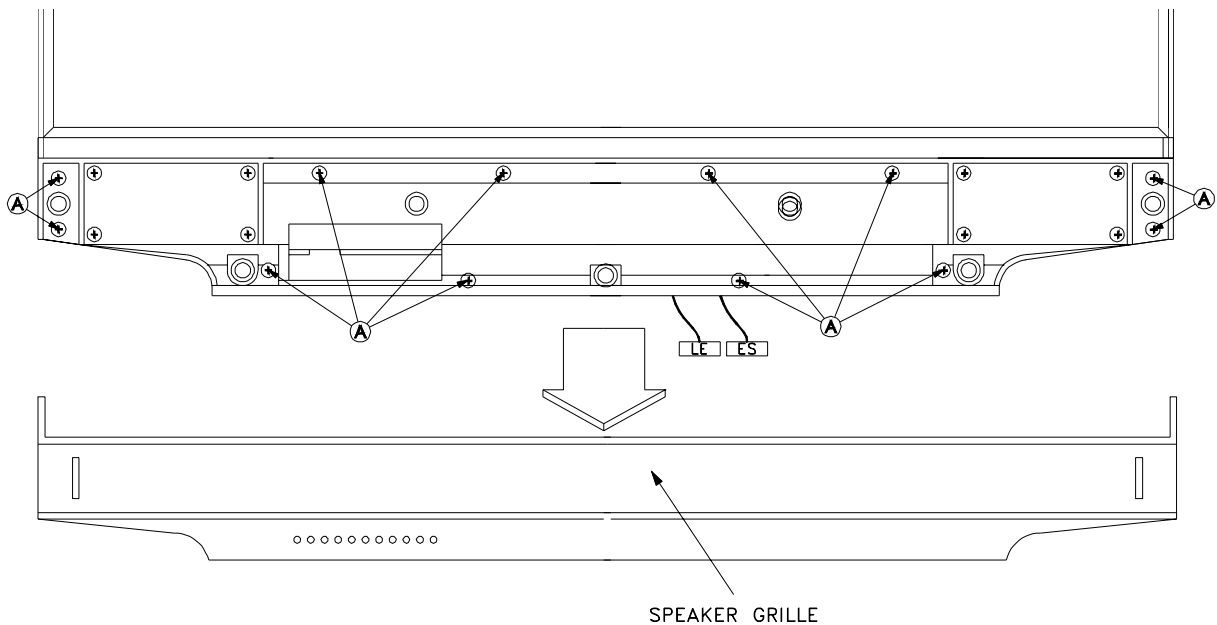
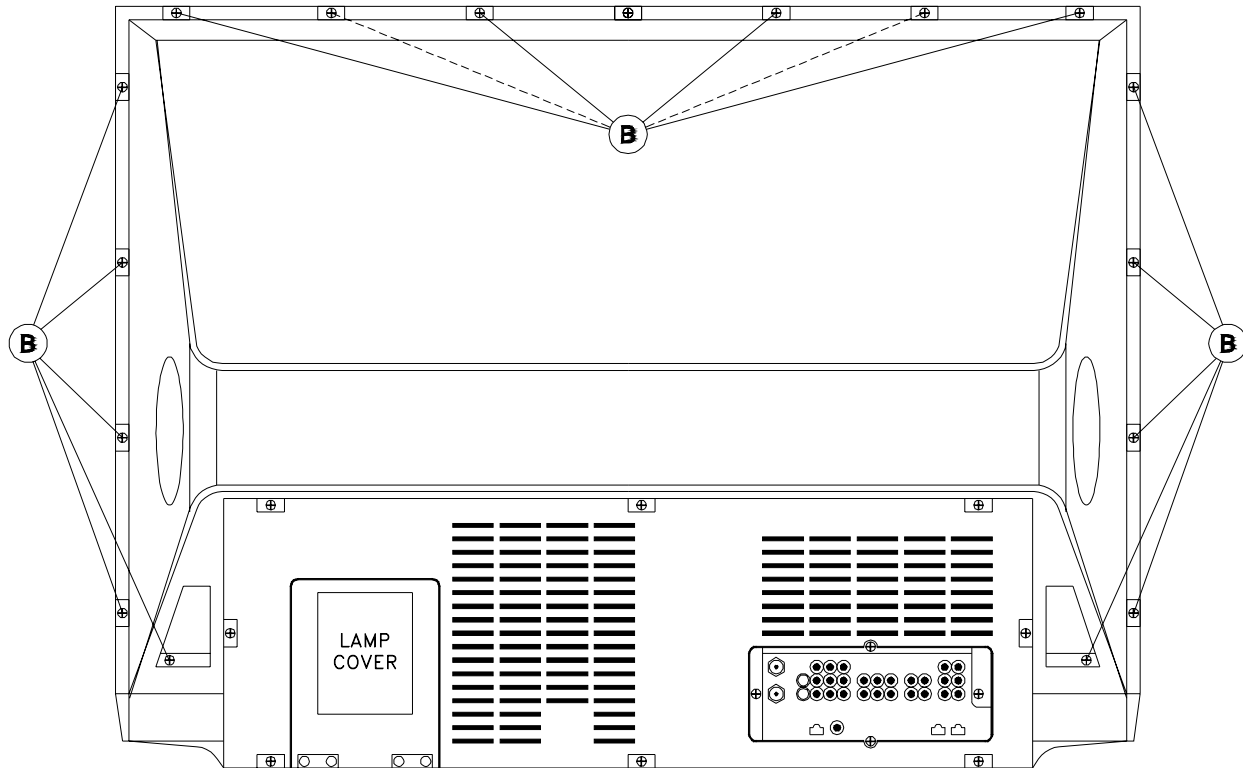
If Light Engine is replaced, see page 22 to perform "Copy Light Engine E2PROM to DM"



Front Disassembly

Screen Frame Removal

- 1) Pull off the Speaker Grill.
- 2) Remove all screws (B) from the upper rear cover (except one screw at a upper corner). The remaining screw supports the screen frame while removing the front screws.
- 3) Remove all screws (A) from the front of the screen frame.
- 4) Carefully pull the Screen Frame from the TV and disconnect the ES and LE connectors.



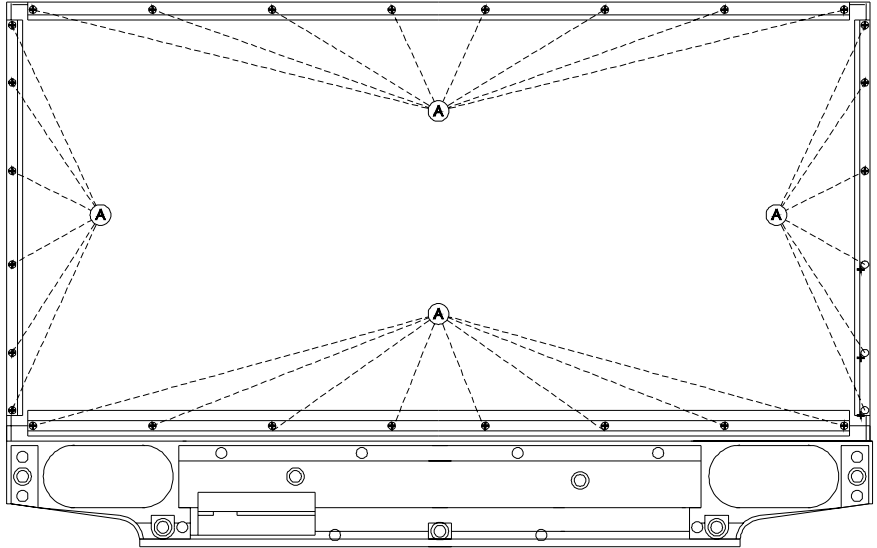
Screen Replacement

CAUTION: Wear gloves when handling the Lenticular Screen and Fresnel Lens. This prevents cuts and finger prints. **Do not place Fresnel Lens in the sun.** This may cause fire and heat related injuries.

Lenticular Screen and Fresnel Lens Removal

- 1) Remove 28 screws (A) to remove the top, bottom and side HOLDER-SCREEN rails and their SPACERS from the Screen Frame. (36 screws in the 62" model)
- 2) Lift the screens as a single unit from the frame.
- 3) Separate the Lenticular Screen and Fresnel Lens.

Note: When separating the Lenticular Screen from the Fresnel Lens, use caution while prying the Screen and Lens apart. Use a slot type screw driver, and remove the pressure sensitive double sided tape.

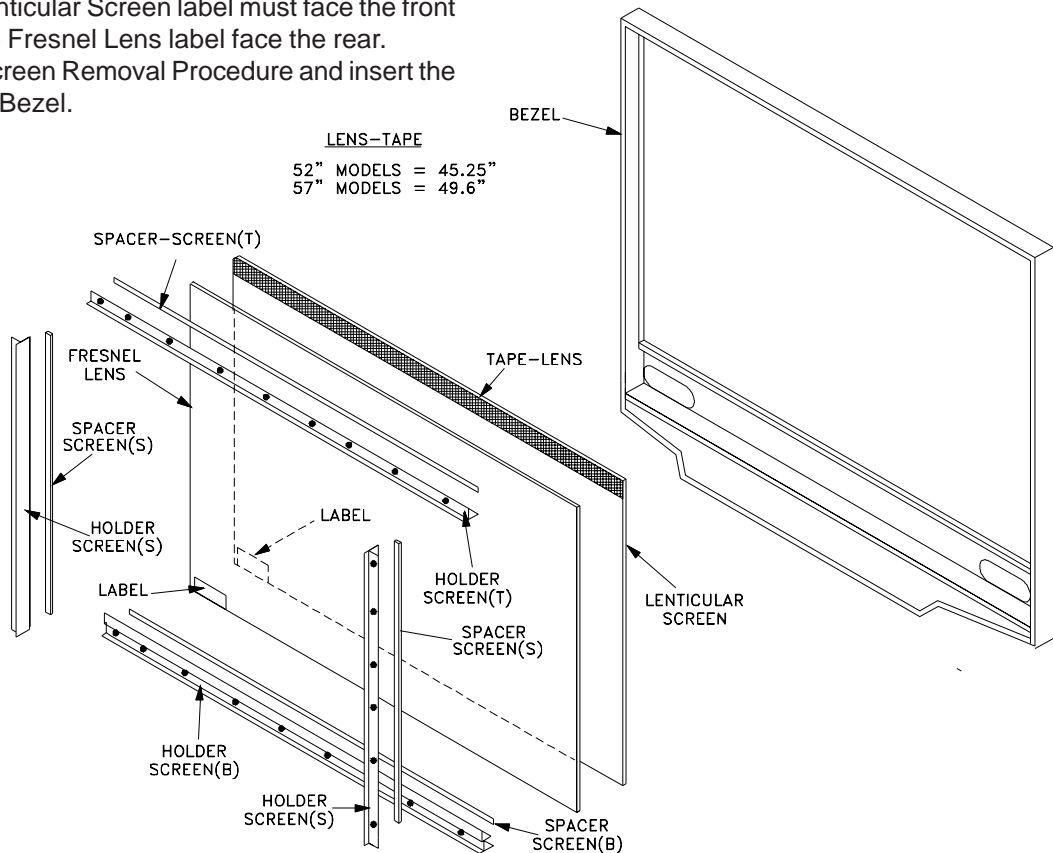


Lenticular Screen and Fresnel Lens Replacement

- 1) Apply LENS-TAPE along the rear top edge of the Lenticular Screen.
- 2) Place the Fresnel Lens on top of the Lenticular Screen, and apply pressure along the top edge.
- 3) Place the screens in the screen frame and reinstall the cushions, top, bottom and side rails.

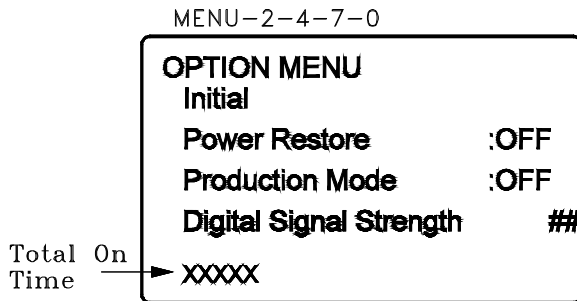
NOTE: The Lenticular Screen label must face the front and the Fresnel Lens label face the rear.

- 4) Reverse the Screen Removal Procedure and insert the screens in the Bezel.

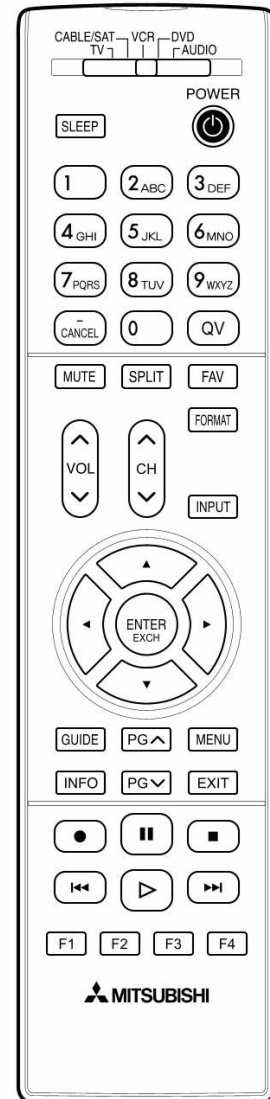


V32/V32L REMOTE CONTROL**OPTION MENU**

1. Press the "MENU" button on the remote hand unit.
2. Press the buttons "2", "4", "7" and "0" in order.
(The screen will change to the option menu.)

**V32/v32L Remote Button Name Changes**

Previous Model Name	New Name
HOME	EXIT
PIP/POP	SPLIT
SQV	FAV
DEVICE	INPUT

**Digital Signal Strength**

1. Tune to a Digital Channel
2. From the Option menu scroll down and highlight Digital Signal Strength
3. Press Enter

Example using on ANT1

Signal Quality Index (0-100)	Tuner 0	Tuner 1	OOB Tuner
Frequency(MHz):	597	0	
Signal Level:	8	0	
Modulation:	256 QAM	Unknown	
Carrier Lock:	Locked	Unknown	
SQI:	100	0	
SNR:	34.3	0	
Correctable errors:	0	0	
UnCorrectable errors:	0	0	

Signal Noise Ratio

SNR Recommended Levels:

VSB = 15 to 35

64 QAM = 22 to 34

256 QAM = 27 to 37

Front Panel Initialization

While the unit is ON, pressing the **FORMAT** and **INPUT** buttons simultaneously will immediately start the Initialization sequence. The TV will reboot once the initialization sequence is completed. Front Panel Initialization will reset ALL user settings to the factory setting.

SERVICE TIP:

Many customer generated symptoms, intermittent symptoms or no symptom found can be resolved by system reset or initialization. Before visiting the customer's home ask the customer 1st to try the System Reset button on the control panel and if this does not resolve the issue, then they can use the front panel initialization by pressing the **FORMAT** and **INPUT** buttons simultaneously

NOTE: During Initialization, the set will reboot. Wait until the Power LED stops flashing before unplugging or powering ON the TV.

RESET / INITIALIZE GUIDE

Reset Name	When to use	How to use	Resulting Action
Remote Control TV Layer Reset	Returns the remote control TV layer to normal operation.	(1) Set the slide switch to TV position. (2) Press and hold the POWER button until it flashes twice then release the button. (3) Enter the code 0 0 9 3 5 .	Once the valid code has been entered and confirmed, the remote control has been reset.
Remote Control TV Volume/Mute functions	Returns the volume and mute functions of the remote control to TV volume and mute for TV, Cable/Sat, VCR and DVD layers after the audio lock for AV Receivers feature has been used.	(1) Set the slide switch to TV position. (2) Press and hold the POWER button until it flashes twice then release the button. (3) Enter the code 9 9 3 VOL UP .	The remote will now operate the TV's volume and mute when the slide switch is in the TV, CABLE/SAT, VCR or DVD positions.
A/V Memory Reset, single input	When the audio and or video settings for a single input seems to incorrect	MENU --> Audio/Video--> AV Reset	All Audio and Video settings for the individual input are reset except for the <i>Listen To</i> and <i>Language</i> , audio <i>Balance</i> and <i>Closed Caption</i> settings.
A/V Reset, all inputs	To reset audio and video adjustments for all inputs to the original factory settings.	While viewing the TV, press the front panel buttons GUIDE and FORMAT at the same time.	All Audio and Video settings including <i>Listen To</i> and <i>Language</i> , <i>Closed Captions</i> settings and <i>Format</i> settings are returned to the original factory settings.
System Reset	To reset the TV when it does not turn on or off, does not respond to the remote control, front panel buttons or has audio but no video.	Press the SYSTEM RESET button on the front panel with a pointed object such as the point of pencil or end tip of a paperclip.	The changes you made most recently, before using the SYSTEM RESET , may be lost. Changes you made previously, however, are not lost.
TV Reset	To reset all customer settings	Press MENU-1-2-3-ENTER	All customer settings except V-Chip are reset.
Initialize - User Level	To reset all consumer adjusted settings and memories to the original factory defaults.	Press FORMAT and INPUT buttons on the front control panel at the same time.	All memories and settings outlined in the Owner's Guide will need to be set again.
Initialize - Service Level	To reset all consumer adjusted settings and memories to the original factory defaults.	MENU + 2470 . Highlight INITIALIZE and press ENTER	All memories and settings outlined in the Owner's Guide will need to be set again. Also erases V-CHIP password
Factory Restore	To recover from data/adjustment errors in the ISF menu	MENU + 2457 + 0 . Highlight RESTORE FACTORY DEFAULTS and press ENTER	All service, user, ISF data is set back to factory defaults.

DEFAULTS AFTER INITIALIZATION

Setup Menu			
Language	:English	TV Rating	:TV-PG
Memorize Channels	--	FV-Fantasy/Violence	--
Ant1 Air	--	D-Sexual Dialog	--
Ant1 Cable	--	L-Adult Language	--
Ant2 Air	--	S-Sexual Situations	--
Ant2 Cable	--	V-Violence	--
Clock		Programs not rated	--
Clock Setting	Manual	Movie Rating	PG
Time	12:00pm	V-Chip Time	
Date	1/01/04	Start	:12:00pm
Time Zone	:Eastern	Stop	:12:00pm
Daylight Savings	:Applies	Lock by Time	:Off
Timer	:Gray Out	Lock Time	:12:00pm
Timer	:Off	Unlock Time	:12:00pm
Day	:Everyday	From Button Lock	:Off
Time	:12:00pm		
Device	:Ant1		
Channel	:2		
Software Version	V32 xxx.xx		
Record		Audio/Video	
Record		A/V Memory Reset	:Ant1
Channel	:2	Audio/Video	
Record to	--	Bass	:50%
Duration	:1 hr	Treble	:50%
Start Time	--	Balance	:50%
Day	--	Surround	:Off
Record List	--	Listen To	:Stereo
Default Record Device	:Gray out	Level Sound	:Off
Analog Recordings	:Anamorphic	Language (Digital Signal Only)	:English
Channel		Video	
Antenna	:1	Picture Mode	:Brilliant
Prefer Digital		Bright/Natural	:Bright
Channel	:2	Brilliant Contrast	:100%
Memory	:Added	Brilliant Brightness	:50%
Name		Color	:50%
FAV		Tint	:50%
Signal Strength	:Digital only	Sharpness	:50%
Captions Menu		Brilliant Color Temp	:High
Analog Captions	:On if Mute	Color	:Manual Center
Background	:Gray	Video Noise	:Standard
Digital Captions	:On if Mute	Video Mute	:On
Appearance	:Default	TV Speakers	:On
Digital Settings		TV Volume	:30%
Font	:Font 3	PIP Source	Ant1 002
Size	:Large	PIP Position	:Lower Right
Color	:White	POP Position	:Right Half
Background	:Black	PIP/POP Format	Double Window
Opacity	:Translucent		
Background Opacity	:Translucent		
Parental Lock		Format	
V-Chip		Ant 1 or 2 480i/480p	:Stretch
US Ratings	:Off	Ant 1 or 2 HD Digital	:Standard
		Input 1, 2, 3	:Standard
		Comp 1, 2	:Standard
		HDMI 1, 2 (Only HDMI 1 in V32L)	:Standard
		Auto Input Detect	
		Input 1, 2, 3	:On
		Componet 1, 2	:On

AV RESET DEFAULTS

A/V Memory	Antenna 1&2	Input 1/2/3	Component 1/2	HDMI 1/*2
Brilliant/Bright/Natural	Bright	Bright	Bright	Bright
Bright Contrast	Maximum	Maximum	Maximum	Maximum
Bright Brightness	Center	Center	Center	Center
Color	Center	Center	Center	Center
Tint	Center	Center	Center	Center
Sharpness	Center	Center	Center	Center
Color Temp.	High	High	High	High
Perfect Color	Manual Center	Manual Center	Manual Center	Manual Center
Video Noise	Standard	Standard	Standard	N/A
Bass	Center	Center	Center	Center
Treble	Center	Center	Center	Center
Balance	Center	Center	Center	Center
Surround	Off	Off	Off	Off
Listen To	Stereo	N/A	N/A	N/A
Level Sound	On	On	N/A	N/A
Language**	English	N/A	N/A	N/A

* HDMI 2 in V32 only.

A. A/V Memory

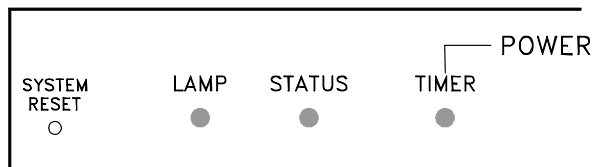
Each of the external inputs has its' own Audio/Video Memory. A change in an A/V setting at a specific input is stored in memory for that specific input.

B. A/V Reset

1. The front panel AV Reset (pressing the "Guide" and "Format" buttons at the same time) initializes all A/V Memories.
2. The AV Reset in the user's menu initializes only the selected input's A/V Memory.

LED Indicator Diagnostics

The front panel LEDs provide an indication of the sets operation, and the possible cause of a malfunction. There are three front panel LEDs, "Power", "Status" and "Lamp". Which LED is lit, the color and whether it is blinking or steady indicate the current status, or a possible malfunction.

*Front Panel LEDs***Normal LED Indications**

POWER LED	STATUS LED	LAMP LED	Power Status	Condition
Off	Off	Off	Stby	Off
Green	Off	Off	P-ON	Power On
Off	Off	Blinks Green	After Turn Off	Lamp Fan On for 1 minute
Blinks Green	Off	Off	Stby	Booting after AC applied
Slow Blinks Green	Off	Off	Stby	On Timer is set

ABNORMAL LED INDICATIONS

Power/Timer Indicator	Status Indicator	Lamp Indicator	Condition
Off	Yellow	Off	Temperature high – room temperature too hot. Temperature sensor is disconnected.
Off	Off	Yellow	Lamp usage warning (over 5000 hours)
Off	Off	Blinking yellow	Lamp cover is open.
	Off	Red	Lamp fails to turn on
Off	Blinking Red	Off	Fan Stop
Off	Red.	Off	Circuit failure (short) DVI cable between DM and Engine disconnected Ballast problem detected by ballast UART (temperature, short circuit, did not ignite, low voltage)

3. Error Code Operational Check

Note: The TV must be in “Shut Down” and not have been switched Off, to perform the Error Code Operational Check. When the TV is switched Off, the code automatically resets to “12” No Error.

Pressing the front panel “DEVICE” and “MENU” buttons at the same time, and holding for 5 seconds, activates the Error Code Mode. The LED flashes denoting a two digit Error Code, or indicating no problem has occurred since the last Initialization.

Note: The front panel buttons must be used, NOT those on the Remote Control.

- The number of flashes indicates the value of the MSD (tens digit) of the Error Code.
- The flashing then pauses for approximately 1/2 second.
- The LED then flashes indicating the value of the LSD (ones digit) of the Error Code.
- The Error Code is repeated a total of 5 times.

Example: If the Error Code is “23”, the LED will flash two times, pause, and then flash three times.

4. Error Codes

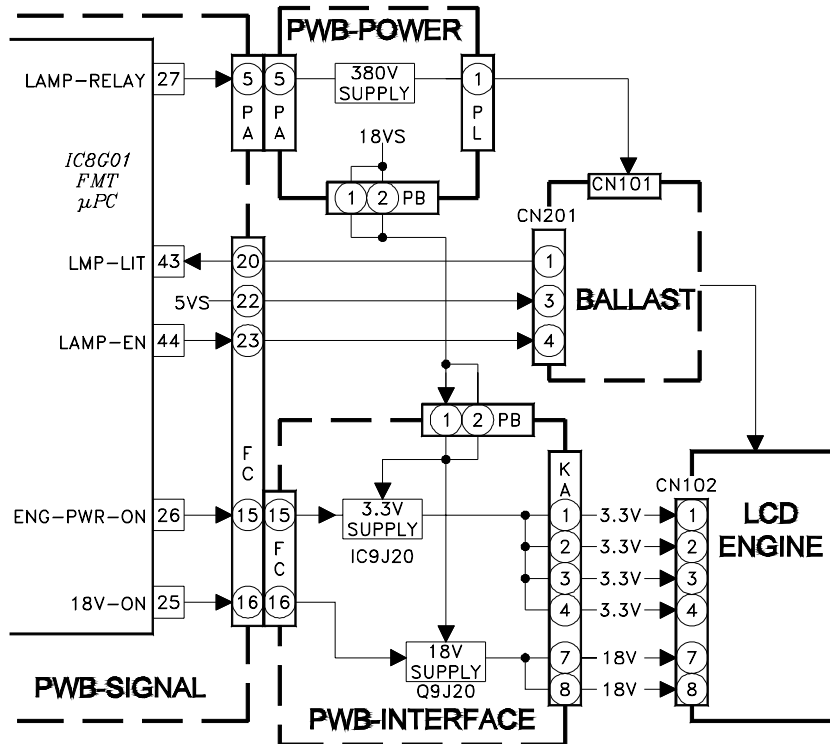
The Error Code designations indicating malfunction, or no malfunction, are listed below:

ERROR CODES	
Code	Description
12	No Error found
32	Lamp cover is open.
34	Lamp turns Off while the TV is playing.
36	Lamp ballast fan failed.
37	Red/Green LCD-PBS fan failed.
38	Lamp temperature abnormally high.
39	LCD Intake temperature abnormally high.
41	Standby Short Detected.
42	Exhaust (lamp) fan failed.
44	Check for disconnected DVI cable between PWB-DM and Engine.
45	BLUE LCD fan failed.
46	LCD Intake Temperature sensor not detected.
48	Engine power supply short is detected. (P-ON short)
66	Lamp did not turn on at P-ON sequence

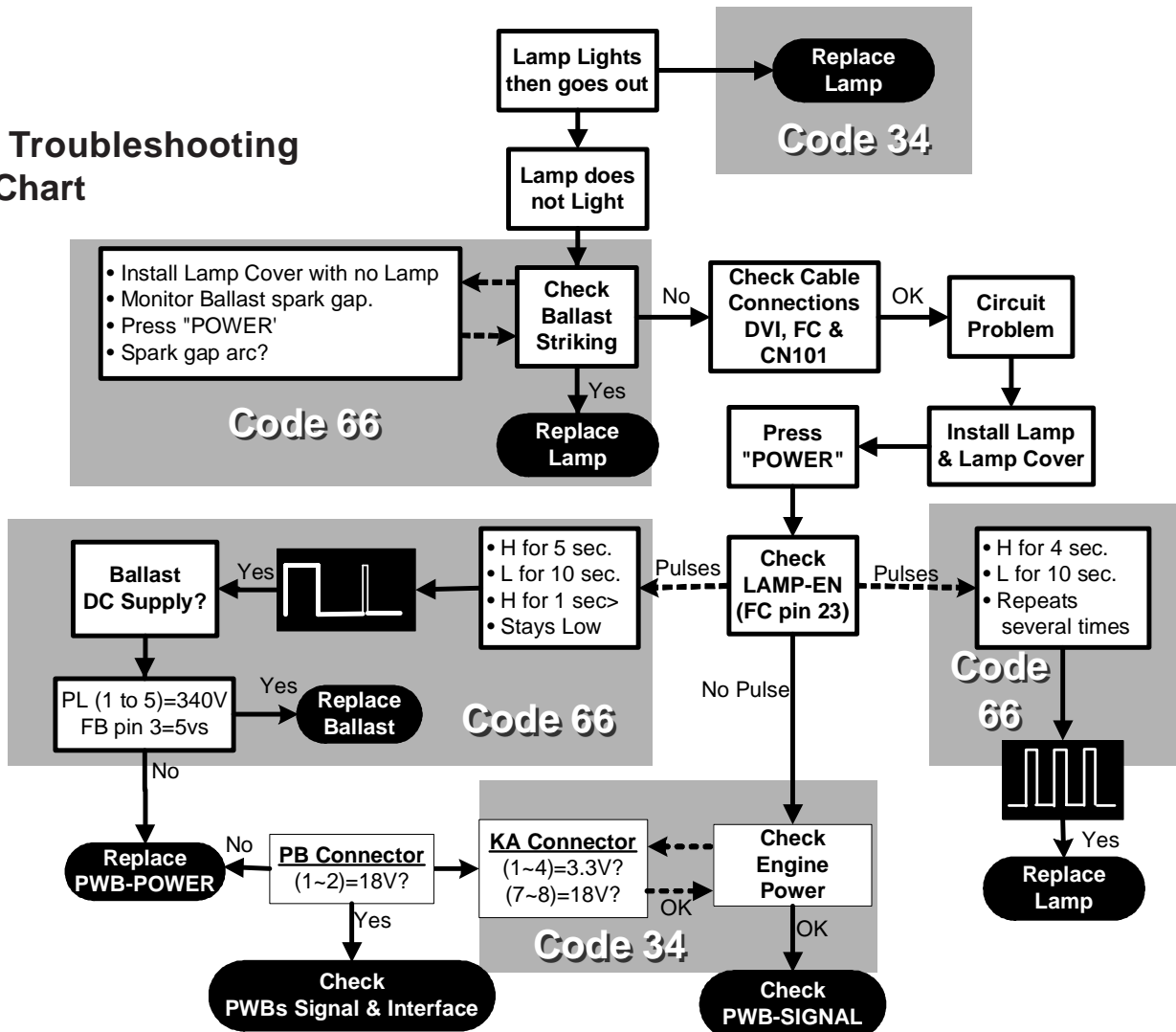
Lamp Troubleshooting

Use the above Error Code Table, and the Lamp Control Block diagram and Troubleshooting flow chart on the following pages to determine the cause of a lamp problem.

Lamp Control Block Diagram



Lamp Troubleshooting Flow Chart



SERVICE ADJUSTMENTS

There are only 5 Service Adjustments required in these models:

Two Electrical Adjustments

- Horizontal Centering
- Vertical Centering

Three Mechanical Adjustment

- Picture Rotation
- Horizontal Keystone Distortion
- Vertical Keystone Distortion

Measuring equipment and Jigs

- No additional Test Equipment is required.
- Conventional Electrical Hand Tools.

Test signal

An internally generated Test Signal is used, no additional external signals are required.

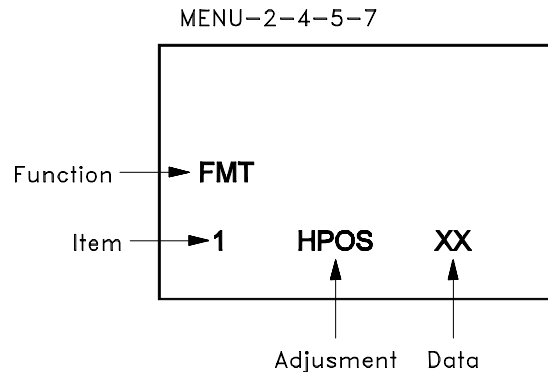
Circuit Adjustment Mode

On these models, the Circuit Adjustment Mode is used only for:

- Test Signal activation
- Horizontal Centering
- Vertical Centering the following adjustments may only be performed using the remote hand unit.

1. Activating the adjustment mode

1. Press the "MENU" button on a remote hand unit.
(The "MENU" display will appear.)
2. Press the buttons "2", "4", "5" and "7" in that order.
(The screen will change to the adjustment mode.)
If not changed to the adjustment mode, repeat steps 1 and 2.



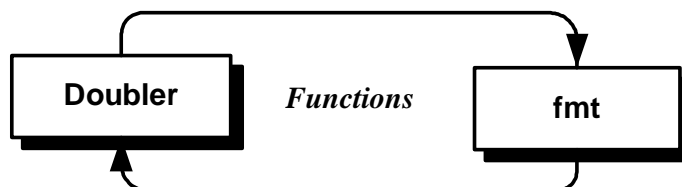
2. Test Signal Activation

When in the Circuit Adjustment mode, use the "REWIND" and "FAST FORWARD" buttons on the remote control to toggle through the test patterns. These patterns are used for both electrical and mechanical adjustments.

3. Adjustment Function Selection

Use the "AUDIO" button to select a specific Adjustment Function.

NOTE: The only Service Adjustment Modes are Format (fmt) and Doubler.



4. Adjustment Selection

Use the "VIDEO" button to select a specific electrical adjustment, "1 HPOS" or "2 VPOS".

5. Adjusting Data

After selecting an adjustment item, use the "UP" and "DN" buttons to change adjustment data.

- If the "UP" button is pressed, the adjustment data increases.
- If the "DN" button is pressed, the adjustment data decreases.

6. Saving data

Press "ENTER" to save the adjustment data in memory.

The display characters go red for approximately one second in this step.

Note: If the circuit adjustment mode is terminated without pressing "ENTER", changes in adjustment data are not saved.

7. Terminating the circuit adjustment mode

Press the "MENU" button on the remote hand unit twice to terminate the adjustment mode.

Note: The adjustment mode can be also terminated by turning the power off.

Transferring Data

- 1) Enter the Service Adjustment Mode ... Press "MENU-2-4-5-7"
- 2) Press "0" when in the Service Mode ... Three choices appear at the top of the screen.
- 3) Use the UP & DN keys to highlight the desired choice, then Press "ENTER"

DATA TRANSFER

MENU-2-4-5-7-0

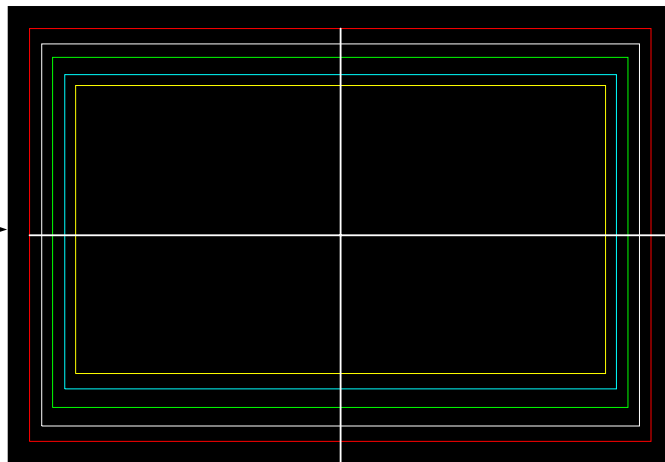
Display	Description
Copy Engine E2PROM to DM	After Replacing Engine or PWB-DM
Restore factory data	Restores factory set values
DOWNLOAD WB ALIGNMENT TO FMT	Copies WB data from E2P to FMT (after PWB-SIGNAL replacement)

Light Engine Adjustments

Test Signal Activation

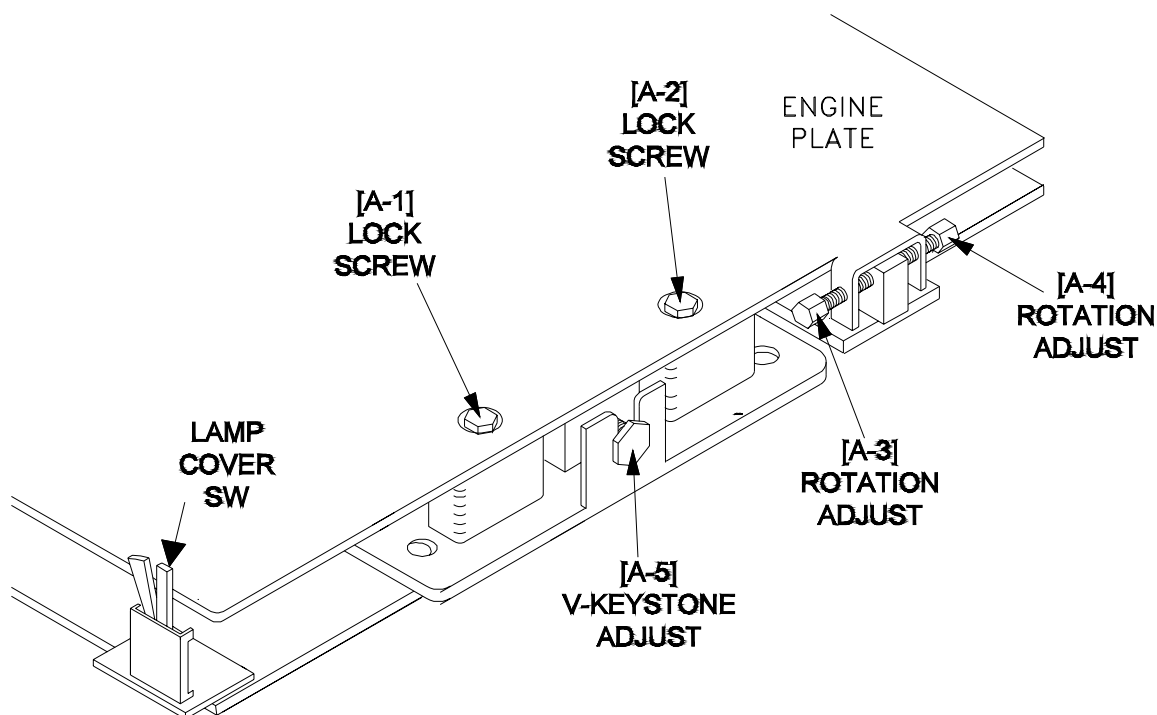
- 1) Press "MENU-2-4-5-7" (Service Mode)
- 2) Press "FF/FWD" (Test Pattern).

Red = 4% overscan
 White = 5% overscan
 Green = 6% overscan
 Cyan = 7% overscan
 Yellow = 10% overscan



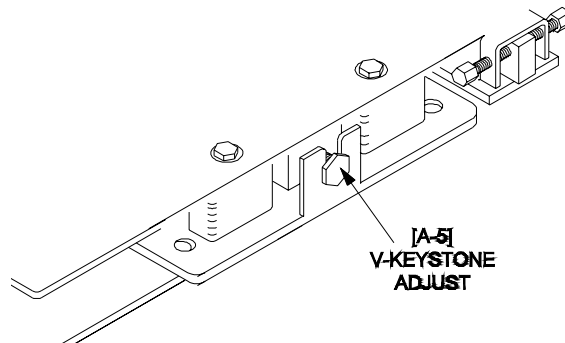
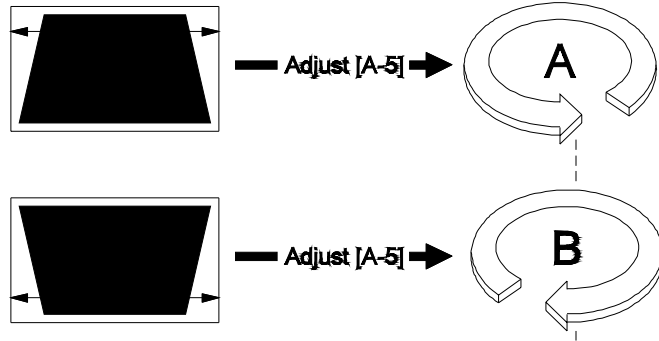
Preliminary (refer to the diagram below)

- 1) Remove the Lamp Cover and Back Cover (page 7)
- 2) Tape Lamp Cover Switch in the forward position (to operate the TV with the back off).
- 3) Loosen locking screws [A-1] and [A-2].
- 4) Loosen Adjust screw [A-3] and [A-4],



Trapezoid Distortion Adjustment

- 1) For Distortion at the top of the picture, rotate [A-5] counter clockwise (the picture will move upward).
- 3) For distortion at the bottom of the picture, rotate [A-5] clockwise (the picture will move upward).

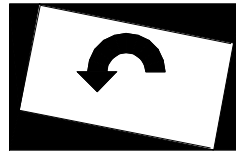


Rotation Adjustment

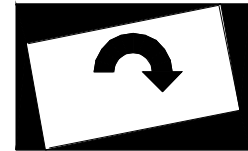
Clockwise Rotation Needed

- 1) Loosen [A-3] and adjust [A-4].
- 2) Tighten [A-3] after adjusting [A-4].

CCW
Adjust

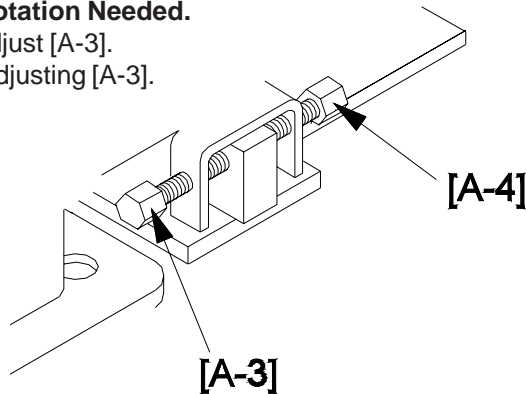


CW
Adjust



Counter Clockwise Rotation Needed.

- 1) Loosen [A-4] and adjust [A-3].
- 2) Tighten [A-4] after adjusting [A-3].



After Adjustment (refer to previous page)

- 1) Insure [A-3] and [A-4] are hand tight.
- 2) Tighten Lock Screw [A-1] (20 kg;cm)
- 3) Tighten Lock Screw [A-2] (20 kg.cm)

NOTE: If horizontal or vertical centering shifts during keystone or rotation adjustments perform the centering adjustment on the following page.

MODEL: WD-52531 / WD-62531 / WD-62530

[Format Circuit]		Purpose: To center the picture on the screen.
Horizont/Vertical Position Adjustment		Symptom: Picture is off center.
Measuring Instrument		<ol style="list-style-type: none">1. Press "MENU-2-4-5-7", activates the Service Mode..2. Press "ff/fwd", activates the Overscan Test Pattern3. Select the "FORMAT" function (AUDIO button).4. Select "Item 1" HPOS (VIDEO button).5. Use the ADJUST buttons to center the picture horizontally.6. Press ENTER to save the new setting.7. Select "Item 2" VPOS (VIDEO button).8. Use the ADJUST buttons to center the picture vertically.9. Press ENTER to save the new setting.10. Press MENU to exit the Service Mode.
Test Point	----	
Ext. Trigger	-----	
Measuring Range	-----	
Input Signal	Internal Test Pattern.	
Input Terminal	Video	



The above symbol indicates Lead (Pb) Free solder was used during the construction of PWBs. **Only Lead Free solder** should be used when servicing these PWBs.

Solder must be compatible with that used by the manufacturer. Leaded solder can not be used on PWBs manufactured with Pb-free solder. The Mitsubishi standard for service requires the use of Tin-Silver-Copper (Sn-96.5, Ag-3.0, Cu-0.5). It can be obtained through the Parts Department.

Order part number: **PB FREE SOLDER**

Lead Free solder has a higher melting point, and does not “wet” as well as leaded solder. This means it does not adhere as readily to the solder iron tip, and the surface to be soldered. To counteract this, the flux used is more corrosive.

The following cautions must be taken when using Pb Free solder.

- Higher temperatures can cause the PWB to warp, detaching surface mount components.
- Higher temperatures may cause thermal damage to components.
- Higher temperatures can cause plastics, such as connectors, relays, LEDs electrolytic capacitors, etc. to melt or warp.
- Higher temperatures can cause surface oxidation resulting in poor solder spread-ability and wet-ability.
- The flux is more corrosive.

Using Lead Free Solder

- The time required for a good solder connection may take longer.
- Poor wet-ability can cause solder balls.
- Higher temperatures can cause flux spattering.
- Soldering iron tip life is shortened.
- Dull finish solder joints (not shiny) can appear to be a “cold” solder joint.

In general a tip temperature of 700° F will usually provide good results.

Displays used to indicate Pb-free

PCBs will be marked, indicating the level of Pb-free construction. *Table 1* defines the levels by phase and shows the different symbols that will be displayed on the PCB. Additionally, a PCB constructed using Pb-free solder may be simply marked **LFS**.

When possible, the indication will be placed close to the part number that is screened onto the PCB (not the part label). *Figure 1* is an example of a PCB showing the display and its location.

Pb-Free Phase	Definition	Display	Short Display (When the area is too small)
Phase-1	PCB's constructed using Pb-free solder.		
Phase-2	Solder, PCB surface finishing and component lead plating is Pb-free. Components may have internal Pb.		
Phase-3	Solder, PCB surface finishing and components are Pb-free. (100% Pb-free)		

Table 1: Pb-Free Phases and Symbols



Figure 2: Pb-Free display on PWB

CHIP PARTS REPLACEMENT

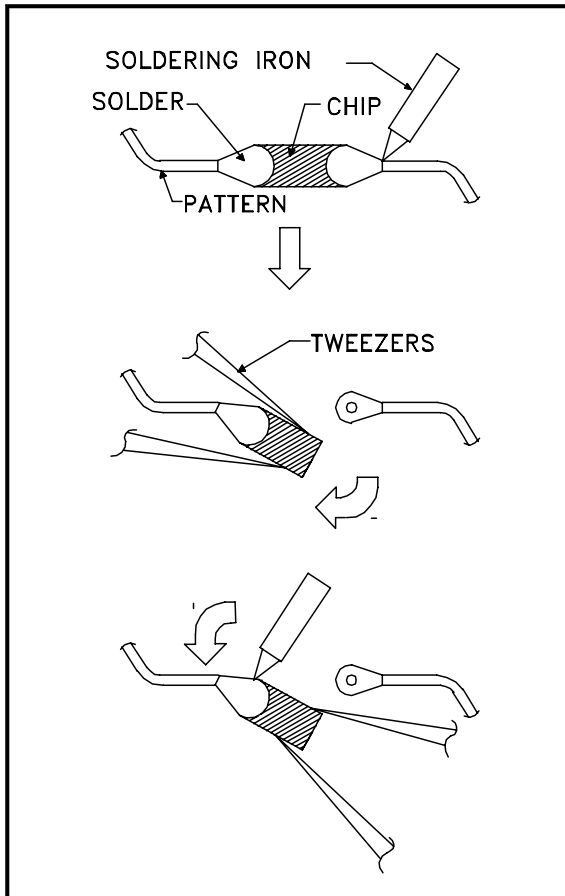
Some resistors, shorting jumpers (0 Ohm resistors), ceramic capacitors, transistors and diodes are chip parts. The following precautions should be taken when replacing these parts.

Cautions:

1. Use a fine tipped, well insulated soldering iron and tweezers.
2. Melt the solder and remove the chip parts carefully so as not to tear the copper foil from the printed circuit board.
3. Discard removed chips; do not reuse them.
4. Do not apply heat for more than 3 (three) seconds to new chip parts.
5. Avoid using a rubbing stroke when soldering.
6. Take care not to scratch, or damage the chip parts when soldering.
7. Supplementary cementing is not required.

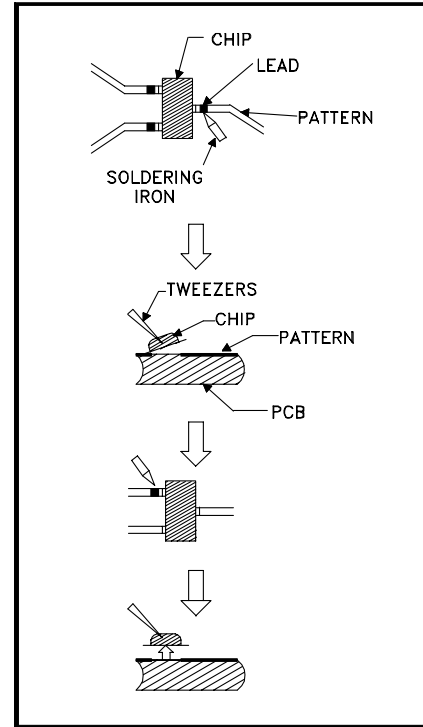
Chip Parts Removal (Resistors, Capacitors, etc.)

1. Grasp the part with tweezers. Melt the solder at both sides alternately, and remove one side of the part with a twisting motion.
2. Melt the solder at the other side and remove the part.



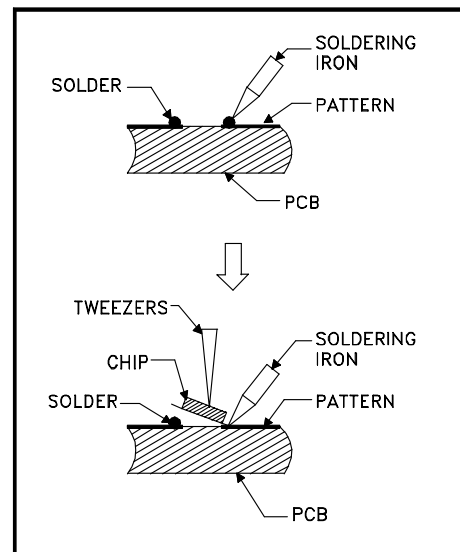
Chip Parts Removal (Transistors)

1. Melt the solder of one lead and lift the side of that lead upward.
2. Simultaneously melt the solder of the other two leads and lift the part from the PCB.



Replacement

1. Presolder the contact points on the circuit pattern.
2. Press the part downward with tweezers and apply the soldering iron as shown.



REPLACEMENT PARTS

Parts Ordering

To expedite delivery of replacement parts orders, specify the following:

1. Model Number/Serial Number
2. Part Number and description
3. Quantity

Note: Unless complete information is supplied, delay in processing of orders will result.

Critical and Warranty Parts Designation

Critical Electrical Components are indicated by **Bold Type** in the Parts List, and in the schematic diagrams by shading.

Warranty Return Parts are indicated in the Parts List with an (*).

Parts Tolerance Codes

Refer to the following chart for tolerance characteristics of electrical components.

MARK	B	C	D	F	G	J	K
Tolerance %	± 0.1	± 0.25	± 0.5	± 1	± 2	± 5	± 10

MARK	M	N	V	X	Z	P	Q
Tolerance %	± 20	± 30	± 10	+ 40 -20	+ 80 -20	+ 100 - 0	+ 30 -10

MARK	M	N	V	X	Z
Tolerance (pF)	± 0.1	± 0.25	± 0.5	± 1	± 2

QUICK REFERENCE FOR COMMON PARTS

CUSTOMER REPLACEABLE PARTS

COMPONENT	PART NUMBER	MODELS
LAMP CARTRIDGE	915P043010	ALL
REMOTE	290P137010	ALL

MAJOR PWB ASSEMBLIES

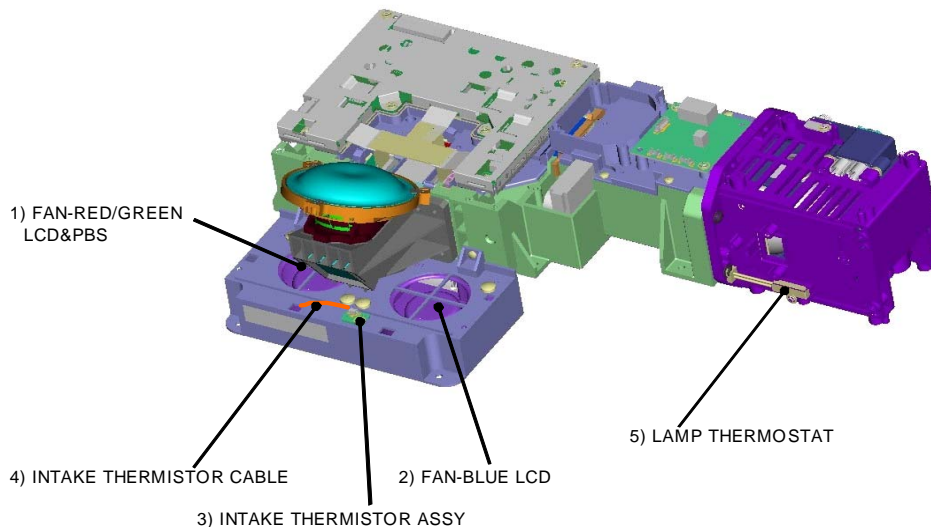
PWB	PART NUMBER	MODELS
PWB-POWER	930B943001	ALL
PWB-SIGNAL	934C216001	WD-52531 / WD-62531
"	934C216002	WD-62530
PWB-DM	934C218001	WD-52531 / WD-62531
"	934C218002	WD-62530
PWB-FRONT	935D885001	ALL
PWB-SW-LAMP	935D887001	ALL
PWB-CONT	935D888001	ALL
PWB-INTERFACE	934C220001	ALL
PWB-PREAMP	935D884001	ALL
BALLAST-LAMP PWR	938P055010	ALL

MIRROR & SCREEN PARTS

MIRROR	LENTICULAR SCREEN	FRESNEL LENS	MODELS
767D083020	491P199050	491P202050	WD-52531
767D083040	491P199060	491P202060	WD-62530 / WD-62531

CHASSIS COMPONENTS

COMPONENT	PART NUMBER	MODELS
OPTICAL ENGINE 52" LCD	938P054010	WD-52531
OPTICAL ENGINE 62" LCD	938P054020	WD-62530 / WD-62531
LAMP/EXHAUST FAN	299P288010	ALL
BALLAST FAN	299P287010	ALL
1) FAN-RED/GREEN LCD&PBS	299P314010	ALL
2) FAN-BLUE LCD	299P315010	ALL
3) INTAKE THERMISTOR ASSY	299P316010	ALL
4) INTAKE THERMISTOR CABLE	299P317010	ALL
5) LAMP THERMOSTAT	299P318010	ALL



MODEL: WD-52531 / WD-62531 / WD-62530

[#] Model Legend: (a) WD-52531, (b) WD-62530, (c) WD-62531

Ref #	Part #	Part Name & Description	[#]
INTEGRATED CIRCUITS			
IC102	276P325010	IC-C-MOS - MAX4232AKA+T/SOT-23+	ac
IC1500	276P322010	IC-C-MOS - T312 A21 100-CG1028	
IC1500	276P322020	IC-C-MOS - T314 218T314ZGArrG	ac
IC1502	271P216010	IC - SC4215ISTR	ac
IC1503	271P072040	IC - LD29150DT18R	ac
IC1504	275P913010	IC-C-MOS - SN74LVC257APWR	ac
IC1504	276P398010	IC-C-MOS - 74LVC257APW-T	
IC2000	276P328010	IC-C-MOS - SiI9023CTU144	b
IC2001	275P981010	IC-C-MOS - 24LCS22AT/SN	b
IC2002	276P299010	IC - CM1213-04MR	b
IC2003	276P299010	IC - CM1213-04MR	b
IC2101	275P981010	IC-C-MOS - 24LCS22AT/SN	
IC2102	276P299010	IC - CM1213-04MR	
IC2103	276P299010	IC - CM1213-04MR	
IC2K01	271P208010	IC - AN15870A	
IC2K02	272P951010	IC - BA7046F	
IC2K04	276P415010	IC-C-MOS - 74LVC14APW-T	
IC2L01	276P415010	IC-C-MOS - 74LVC14APW-T	
IC3001	271P209010	IC - AN5832SA	
IC3E01	271P138010	IC - LV1115	
IC3E02	276P271010	IC-C-MOS - MP7720DS-LF-Z	
IC3E03	276P271010	IC-C-MOS - MP7720DS-LF-Z	
IC3J01	271P210010	IC - MM1699XJBE	
IC7A00	276P245030	IC-C-MOS - M306V7MG-162FP#U0	
IC7A02	270P706020	IC - MAX823REUK	
IC7A03	276P424010	IC-C-MOS - TC7SA08FU	
IC7A29	271P023010	IC - SN74CBTD1G125DBVR	
IC7E01	276P197010	IC-C-MOS - AD9981KST-80	
IC7E03	270P992010	IC - BA18BC0FP	
IC7E05	270P992030	IC - BA33BC0FP-E2	
IC7G01	276P404010	IC-C-MOS - IS42S32200C17TL	
IC7G02	270P348010	IC - TLC2932IPW	
IC7G03	270P992030	IC - BA33BC0FP-E2	
IC7G04	275P236020	IC-C-MOS - TC74LVX244FT	
IC7G05	276P423010	IC-C-MOS - TC74HCT7007AF	
IC7G06	270P879030	IC - SC156615M-2.5TR	
IC7G07	276P404010	IC-C-MOS - IS42S32200C17TL	
IC7G08	276P324010	IC-C-MOS - MB87S1730PB-G-ZE1	
IC7G09	276P414010	IC-C-MOS - 74HC4066PW-T	
IC7G10	276P325010	IC-C-MOS - MAX4232AKA+T/SOT-23+	
IC8001	276P030030	IC-C-MOS - 215H31AGA12H	
IC8002	270P706020	IC - MAX823REUK	
IC8004	276P400010	IC-C-MOS - 74LVC1G125GV	
IC8008	276P401010	IC-C-MOS - 74LVC2G125DC	
IC8080	276P400010	IC-C-MOS - 74LVC1G125GV	
IC80E1	276P174020	IC-C-MOS - AT24C256BN-10SU-1.8	
IC80E2	271P150010	IC - 24LCS12T-I/SM	
IC80E3	276P174030	IC-C-MOS - AT24C64AN-10SU-2.7	
IC8101	271P033010	IC - LP2996MRX	ac
IC8102	276P029030	IC-C-MOS - NT5DS16M16CS-5T	ac
IC8103	276P029030	IC-C-MOS - NT5DS16M16CS-5T	ac
IC8104	276P029030	IC-C-MOS - NT5DS16M16CS-5T	ac
IC8105	276P029030	IC-C-MOS - NT5DS16M16CS-5T	ac
IC8205	276P042010	IC-C-MOS - MIC2544-1BM	
IC8211	276P029030	IC-C-MOS - NT5DS16M16CS-5T	
IC8212	276P029030	IC-C-MOS - NT5DS16M16CS-5T	
IC8280	276P215010	IC-C-MOS - DS1337U+T&R	
IC8301	275P677010	IC-C-MOS - SN74LVC573APWR	ac

Ref #	Part #	Part Name & Description	[#]
IC8301	276P399010	IC-C-MOS - 74LVC573APW-T	
IC8302	276P323010	IC-C-MOS - S29AL004D70TFI010H	ac
IC8303	275P677010	IC-C-MOS - SN74LVC573APWR	ac
IC8303	276P399010	IC-C-MOS - 74LVC573APW-T	
IC8304	275P956030	IC-C-MOS - MD5811-D256-V3Q18-P	ac
IC8305	275P677010	IC-C-MOS - SN74LVC573APWR	ac
IC8305	276P399010	IC-C-MOS - 74LVC573APW-T	
IC8307	276P199010	IC-C-MOS - ST16C654CQ64TR-F	ac
IC8308	275P677010	IC-C-MOS - SN74LVC573APWR	ac
IC8308	276P399010	IC-C-MOS - 74LVC573APW-T	
IC8312	276P333010	IC-C-MOS - LCMX0256C3TN10C	ac
IC8320	276P396010	IC-C-MOS - MD8832-d1G-V3-X-P	
IC8501	276P202020	IC-C-MOS - ICS443M-20LFT	ac
IC8505	275P677010	IC-C-MOS - SN74LVC573APWR	ac
IC8506	276P065030	IC-C-MOS - CIMAX SP2 PBF	ac
IC8507	275P913010	IC-C-MOS - SN74LVC257APWR	ac
IC8511	271P171010	IC - MIC2040-1YMM	ac
IC8512	271P171010	IC - MIC2040-1YMM	ac
IC8513	271P171010	IC - MIC2040-1YMM	ac
IC8A02	276P146010	IC-C-MOS - CS5340-CZR	
IC8A05	276P326010	IC-C-MOS - CS4351-CZZR	
IC8A06	276P326010	IC-C-MOS - CS4351-CZZR	
IC8F01	276P107020	IC-C-MOS - SiI164CTG64TR	
IC8G00	276P405010	IC-C-MOS - M30843MWA08FPU0	
IC8G01	276P401010	IC-C-MOS - 74LVC2G125DC	
IC8G02	276P413010	IC-C-MOS - 74LVC1G17GW	
IC8G04	276P174020	IC-C-MOS - AT24C256BN-10SU-1.8	
IC8G05	271P149010	IC-C-MOS - M62368GP#CFOJ	
IC9A10 267P175010 HIC - STR-W6735			
IC9A20 271P142010 IC - RT9H301C			
IC9C51	271P072020	IC - LD29150DT33	
IC9C71	271P171010	IC - MIC2040-1YMM	b
IC9C81	271P072040	IC - LD29150DT18R	b
IC9G21	271P141010	IC - TPS40071PWPR	
IC9G22	270P879030	IC - SC156615M-2.5TR	
IC9G23	271P072040	IC - LD29150DT18R	
IC9G24	270P879030	IC - SC156615M-2.5TR	
IC9H05	271P215010	IC - MP2355DN-LF-Z	
IC9H06	271P211010	IC - SI8008TM-TL	
IC9H07	271P211010	IC - SI8008TM-TL	
IC9J01	276P415010	IC-C-MOS - 74LVC14APW-T	
IC9J03	271P211010	IC - SI8008TM-TL	
IC9J04	271P211010	IC - SI8008TM-TL	
IC9J05	271P211010	IC - SI8008TM-TL	
IC9J20	271P211010	IC - SI8008TM-TL	
TRANSISTORS			
CHIP Type Transistors (Listed by Part No.)			
	<u>Part No.</u>	<u>Description</u>	
	261P837010	UPA672Tz	
	261P839010	TPCP8J01	
	261P842030	2SC3052-T112-1G	
	261P842080	2SC3052-T112-1E;F	
	261P843080	2SA1235-T112-1E;F	
	261P844010	RT1N436C-T112-1	
	261P845010	RT1P241C-T1112-1	
	261P859010	Si7804DN-T1-E3	
	261P837010	UPA672T	
	261P839010	TPCP8J01	

MODEL: WD-52531 / WD-62531 / WD-62530

[#] Model Legend: (a) WD-52531, (b) WD-62530, (c) WD-62531

Ref #	Part #	Part Name & Description	[#]
	<u>Part No.</u>	<u>Description</u>	
	261P842030	2SC3052-T112-1G	
	261P842080	2SC3052-T112-1E;F	
	261P843080	2SA1235-T112-1E;F	
	261P844010	RT1N436C-T112-1	
	261P845010	RT1P241C-T1112-1	
	261P859010	Si7804DN-T1-E3	
DIODES			
D101	262P075010	DIODE - RSB6.8S	
D2001	262P828010	D-CHIP - MC2838-T112-1	b
D2002	262P828010	D-CHIP - MC2838-T112-1	b
D2003	262P828010	D-CHIP - MC2838-T112-1	b
D2021	262P840090	D-CHIP - MAZ80510H	b
D2101	262P828010	D-CHIP - MC2838-T112-1	
D2102	262P828010	D-CHIP - MC2838-T112-1	
D2103	262P828010	D-CHIP - MC2838-T112-1	
D2121	262P840090	D-CHIP - MAZ80510H	
D3E01	262P841010	D-CHIP - MAZ80620H	
D3E02	262P087010	D-CHIP - EC21QS04-TE12L	
D3E21	262P841010	D-CHIP - MAZ80620H	
D3E22	262P087010	D-CHIP - EC21QS04-TE12L	
D7A44	262P828010	D-CHIP - MC2838-T112-1	
D7A73	262P828010	D-CHIP - MC2838-T112-1	
D7L21	264P212020	D-LED - LN31GPH	
D7L22	264P584020	DIODE-LE - SML1216W-C,D	
D7L23	264P584020	DIODE-LE - SML1216W-C,D	
D8203	264P846010	D-CHIP - MA732	
D8204	264P846010	D-CHIP - MA732	
D8280	262P828010	D-CHIP - MC2838-T112-1	
D8504	262P832010	D-LE-CHIP - CL-270F-CD-TS	ac
D8G00	262P830010	D-CHIP - MC2850-T111-1	
D9A00	262P162010	DIODE - D3SB80	
D9A02	264P045080	DIODE - 1S2076A/1S2471OM	
D9A03	264P776030	DIODE - MTZJ6.8C - LF	
D9A04	264P045080	DIODE - 1S2076A/1S2471OM	
D9A05	262P170010	DIODE - SARS01	
D9A06	262P158010	DIODE - S3V60-5004P.15	
D9A07	262P158010	DIODE - S3V60-5004P.15	
D9A18	264P045080	DIODE - 1S2076A/1S2471OM	
D9A19	264P045080	DIODE - 1S2076A/1S2471OM	
D9A20	264P045080	DIODE - 1S2076A/1S2471OM	
D9A23	262P085010	DIODE - 11EFS2N-TA2B5	
D9A24	262P085010	DIODE - 11EFS2N-TA2B5	
D9A25	262P085010	DIODE - 11EFS2N-TA2B5	
D9A26	262P159010	DIODE - FSH10A10	
D9A31	262P084020	DIODE - 31DQ09-FC5	
D9G21	262P090010	DIODE - M1FP3	
D9G22	262P840060	D-CHIP - MAZ80390H	
D9H04	262P828020	D-CHIP - MC2836-T112-1	
D9H05	262P160010	D-CHIP - EC31QS04-TE12L	
D9H06	262P843010	D-CHIP - MAZ80560H	
D9H07	262P828020	D-CHIP - MC2836-T112-1	
D9H10	262P087010	D-CHIP - EC21QS04-TE12L	
D9H11	262P841060	D-CHIP - MAZ81000H	
D9H13	262P830010	D-CHIP - MC2850-T111-1	
D9H15	262P842080	D-CHIP - MAZ83000H	
D9H20	262P087010	D-CHIP - EC21QS04-TE12L	
D9H21	262P843010	D-CHIP - MAZ80560H	
D9J01	262P828010	D-CHIP - MC2838-T112-1	

Ref #	Part #	Part Name & Description	[#]
D9J02	262P828010	D-CHIP - MC2838-T112-1	
D9J03	262P828010	D-CHIP - MC2838-T112-1	
D9J04	262P828020	D-CHIP - MC2836-T112-1	
D9J05	262P828020	D-CHIP - MC2836-T112-1	
D9J06	262P828020	D-CHIP - MC2836-T112-1	
D9J07	262P087010	D-CHIP - EC21QS04-TE12L	
D9J08	262P087010	D-CHIP - EC21QS04-TE12L	
D9J09	262P087010	D-CHIP - EC21QS04-TE12L	
D9J20	262P087010	D-CHIP - EC21QS04-TE12L	
D9J21	262P840060	D-CHIP - MAZ80390H	
D9J37	262P828020	D-CHIP - MC2836-T112-1	
COILS			
L101	409P923060	EMI-F-CHIP - BLM21B272S	ac
L102	409P923060	EMI-F-CHIP - BLM21B272S	ac
L103	409P923060	EMI-F-CHIP - BLM21B272S	ac
L104	409P865080	EMI-F-CHIP - BLM18PG6	ac
L105	409P865020	EMI-F-CHIP - BLM11A601S	
L106	409P865020	EMI-F-CHIP - BLM11A601S	
L1500	409P865070	EMI-F-CHIP - BLM11P300S	ac
L1501	409P777080	EMI-F-CHIP - BLM21P221S	ac
L1502	409P865070	EMI-F-CHIP - BLM11P300S	ac
L1503	409P865070	EMI-F-CHIP - BLM11P300S	ac
L1504	409P865070	EMI-F-CHIP - BLM11P300S	ac
L1505	409P865070	EMI-F-CHIP - BLM11P300S	ac
L1506	409P865070	EMI-F-CHIP - BLM11P300S	ac
L1507	409P865070	EMI-F-CHIP - BLM11P300S	ac
L1508	409P865070	EMI-F-CHIP - BLM11P300S	ac
L1509	409P777080	EMI-F-CHIP - BLM21P221S	
L1509	409P777080	EMI-F-CHIP - BLM21P221S	ac
L1510	409P865070	EMI-F-CHIP - BLM11P300S	ac
L2018	409P777080	EMI-F-CHIP - BLM21P221S	b
L2118	409P777080	EMI-F-CHIP - BLM21P221S	
L2216	409P777080	EMI-F-CHIP - BLM21P221S	b
L2222	409P777080	EMI-F-CHIP - BLM21P221S	b
L2235	409P777080	EMI-F-CHIP - BLM21P221S	b
L2237	409P777080	EMI-F-CHIP - BLM21P221S	b
L2238	409P777080	EMI-F-CHIP - BLM21P221S	b
L2255	409P777080	EMI-F-CHIP - BLM21P221S	b
L2287	409P777080	EMI-F-CHIP - BLM21P221S	b
L2289	409P777080	EMI-F-CHIP - BLM21P221S	b
L2294	409P777080	EMI-F-CHIP - BLM21P221S	b
L2295	409P865020	EMI-F-CHIP - BLM11A601S	b
L2296	409P865020	EMI-F-CHIP - BLM11A601S	b
L2334	409P777080	EMI-F-CHIP - BLM21P221S	b
L2337	409P777080	EMI-F-CHIP - BLM21P221S	b
L2C11	409P777080	EMI-F-CHIP - BLM21P221S	
L2K03	409P777080	EMI-F-CHIP - BLM21P221S	
L2K05	325C420070	COIL-CHIP - 10MH-K	
L2K16	325C421020	COIL-CHIP - 68MH-K LOW-R	
L2K49	325C421020	COIL-CHIP - 68MH-K LOW-R	
L2K77	325C420070	COIL-CHIP - 10MH-K	
L2KA0	325C411030	COIL-CHIP - 10MH-J	
L2KC0	409P777080	EMI-F-CHIP - BLM21P221S	
L2KD0	325C411030	COIL-CHIP - 10MH-J	
L2KD1	321C114010	COIL-RF - 2200MH-J	
L2KE0	409P777080	EMI-F-CHIP - BLM21P221S	
L2KF0	325C411030	COIL-CHIP - 10MH-J	
L2KF1	321C114010	COIL-RF - 2200MH-J	

MODEL: WD-52531 / WD-62531 / WD-62530

[#] Model Legend: (a) WD-52531, (b) WD-62530, (c) WD-62531

Ref #	Part #	Part Name & Description	[#]
L2KG0	325C411030	COIL-CHIP - 10MH-J	
L2L41	409P865060	EMI-F-CHIP - BLM11B141S	
L2L43	409P865060	EMI-F-CHIP - BLM11B141S	
L2L45	409P865060	EMI-F-CHIP - BLM11B141S	
L2L47	409P865060	EMI-F-CHIP - BLM11B141S	
L2L49	409P865060	EMI-F-CHIP - BLM11B141S	
L2L51	409P865060	EMI-F-CHIP - BLM11B141S	
L2L52	409P865060	EMI-F-CHIP - BLM11B141S	
L2L61	325C411030	COIL-CHIP - 10MH-J	
L3001	409P865020	EMI-F-CHIP - BLM11A601S	
L3E01	409P865020	EMI-F-CHIP - BLM11A601S	
L3E10	409P865020	EMI-F-CHIP - BLM11A601S	
L3E12	409P777080	EMI-F-CHIP - BLM21P221S	
L3E13	351P283010	COIL-CHOKE-CHIP - SLF12575T-100M5R4-PF	
L3E22	409P777080	EMI-F-CHIP - BLM21P221S	
L3E23	351P283010	COIL-CHOKE-CHIP - SLF12575T-100M5R4-PF	
L3J36	409P777080	EMI-F-CHIP - BLM21P221S	
L7A16	409P777050	EMI-F-CHIP - BLM21B201S	
L7A73	409P865060	EMI-F-CHIP - BLM11B141S	
L7A89	409P777050	EMI-F-CHIP - BLM21B201S	
L7A99	409P777050	EMI-F-CHIP - BLM21B201S	
L7C11	409P865060	EMI-F-CHIP - BLM11B141S	
L7C12	409P865060	EMI-F-CHIP - BLM11B141S	
L7C13	409P865060	EMI-F-CHIP - BLM11B141S	
L7C14	409P865060	EMI-F-CHIP - BLM11B141S	
L7C16	409P865060	EMI-F-CHIP - BLM11B141S	
L7C17	409P865060	EMI-F-CHIP - BLM11B141S	
L7C18	409P865060	EMI-F-CHIP - BLM11B141S	
L7C19	409P865060	EMI-F-CHIP - BLM11B141S	
L7C20	409P865060	EMI-F-CHIP - BLM11B141S	
L7C22	409P865060	EMI-F-CHIP - BLM11B141S	
L7C23	409P865060	EMI-F-CHIP - BLM11B141S	
L7E00	325C420070	COIL-CHIP - 10MH-K	
L7E01	325C420070	COIL-CHIP - 10MH-K	
L7E02	409P777080	EMI-F-CHIP - BLM21P221S	
L7E06	409P865090	EMI-F-CHIP - BLM11A121S	
L7E13	409P865080	EMI-F-CHIP - BLM18PG6	
L7G01	325C420070	COIL-CHIP - 10MH-K	
L7G02	409P865080	EMI-F-CHIP - BLM18PG6	
L7G03	409P777080	EMI-F-CHIP - BLM21P221S	
L7G04	409P865080	EMI-F-CHIP - BLM18PG6	
L7G05	409P777080	EMI-F-CHIP - BLM21P221S	
L7G06	409P777080	EMI-F-CHIP - BLM21P221S	
L7G07	409P865080	EMI-F-CHIP - BLM18PG6	
L7G08	409P865080	EMI-F-CHIP - BLM18PG6	
L7G09	409P865080	EMI-F-CHIP - BLM18PG6	
L7G10	409P777080	EMI-F-CHIP - BLM21P221S	
L7G12	409P865020	EMI-F-CHIP - BLM11A601S	
L7GA0	409P777080	EMI-F-CHIP - BLM21P221S	
L7GA1	409P777080	EMI-F-CHIP - BLM21P221S	
L7K01	409P777080	EMI-F-CHIP - BLM21P221S	
L8001	409P865080	EMI-F-CHIP - BLM18PG6	
L8002	409P865080	EMI-F-CHIP - BLM18PG6	
L8003	409P865080	EMI-F-CHIP - BLM18PG6	
L8004	409P865080	EMI-F-CHIP - BLM18PG6	
L8005	409P865080	EMI-F-CHIP - BLM18PG6	
L8006	409P865080	EMI-F-CHIP - BLM18PG6	
L8007	409P865080	EMI-F-CHIP - BLM18PG6	
L8008	409P865080	EMI-F-CHIP - BLM18PG6	
L8009	409P777080	EMI-F-CHIP - BLM21P221S	

Ref #	Part #	Part Name & Description	[#]
L8011	409P865080	EMI-F-CHIP - BLM18PG6	
L8013	409P865080	EMI-F-CHIP - BLM18PG6	
L8080	409P865080	EMI-F-CHIP - BLM18PG6	
L8202	409P777080	EMI-F-CHIP - BLM21P221S	
L8203	409P777080	EMI-F-CHIP - BLM21P221S	
L8206	351P265010	COIL-CHOKE-CHIP - ACM2012	
L8280	409P865080	EMI-F-CHIP - BLM18PG6	
L8306	409P865080	EMI-F-CHIP - BLM18PG6	ac
L8306	409P865080	EMI-F-CHIP - BLM18PG6	
L8307	409P865080	EMI-F-CHIP - BLM18PG6	
L8307	409P865080	EMI-F-CHIP - BLM18PG6	ac
L8308	409P865080	EMI-F-CHIP - BLM18PG6	
L8308	409P865080	EMI-F-CHIP - BLM18PG6	ac
L8309	409P865080	EMI-F-CHIP - BLM18PG6	ac
L8310	409P865080	EMI-F-CHIP - BLM18PG6	
L8310	409P865080	EMI-F-CHIP - BLM18PG6	ac
L8313	409P865080	EMI-F-CHIP - BLM18PG6	
L8313	409P865080	EMI-F-CHIP - BLM18PG6	ac
L8314	409P865080	EMI-F-CHIP - BLM18PG6	
L8314	409P865080	EMI-F-CHIP - BLM18PG6	ac
L8318	409P865080	EMI-F-CHIP - BLM18PG6	
L8318	409P865080	EMI-F-CHIP - BLM18PG6	ac
L8320	409P865080	EMI-F-CHIP - BLM18PG6	
L83A1	409P865080	EMI-F-CHIP - BLM18PG6	
L83A1	409P865080	EMI-F-CHIP - BLM18PG6	ac
L83B3	325C501010	COIL-CHIP - ALQM21NNR47K10	ac
L8501	409P865080	EMI-F-CHIP - BLM18PG6	ac
L8502	409P777080	EMI-F-CHIP - BLM21P221S	ac
L8504	409P865090	EMI-F-CHIP - BLM11A121S	ac
L8507	409P865080	EMI-F-CHIP - BLM18PG6	ac
L8508	409P865080	EMI-F-CHIP - BLM18PG6	ac
L8510	409P865090	EMI-F-CHIP - BLM11A121S	ac
L8511	409P865090	EMI-F-CHIP - BLM11A121S	ac
L8732	409P865060	EMI-F-CHIP - BLM11B141S	
L8733	409P865060	EMI-F-CHIP - BLM11B141S	
L8734	409P865060	EMI-F-CHIP - BLM11B141S	
L8735	409P865060	EMI-F-CHIP - BLM11B141S	
L8A05	409P865020	EMI-F-CHIP - BLM11A601S	
L8A06	409P865020	EMI-F-CHIP - BLM11A601S	
L8A07	409P865020	EMI-F-CHIP - BLM11A601S	
L8A10	409P865020	EMI-F-CHIP - BLM11A601S	
L8A11	409P865020	EMI-F-CHIP - BLM11A601S	
L8A15	409P865020	EMI-F-CHIP - BLM11A601S	
L8A16	409P865020	EMI-F-CHIP - BLM11A601S	
L8A17	409P865020	EMI-F-CHIP - BLM11A601S	
L8F01	409P777080	EMI-F-CHIP - BLM21P221S	
L8F02	409P777080	EMI-F-CHIP - BLM21P221S	
L8F03	409P777080	EMI-F-CHIP - BLM21P221S	
L8F04	409P777080	EMI-F-CHIP - BLM21P221S	
L8F05	409P777080	EMI-F-CHIP - BLM21P221S	
L8F06	409P777080	EMI-F-CHIP - BLM21P221S	
L8F07	409P777080	EMI-F-CHIP - BLM21P221S	
L8F08	409P777080	EMI-F-CHIP - BLM21P221S	
L8G03	409P777080	EMI-F-CHIP - BLM21P221S	
L8G04	409P777080	EMI-F-CHIP - BLM21P221S	
L8G08	409P777080	EMI-F-CHIP - BLM21P221S	
L8G21	409P865060	EMI-F-CHIP - BLM11B141S	
L8G22	409P865060	EMI-F-CHIP - BLM11B141S	
L8G23	409P865060	EMI-F-CHIP - BLM11B141S	
L8G24	409P865060	EMI-F-CHIP - BLM11B141S	

MODEL: WD-52531 / WD-62531 / WD-62530

[#] Model Legend: (a) WD-52531, (b) WD-62530, (c) WD-62531

Ref #	Part #	Part Name & Description	[#]
L8G25	409P865060	EMI-F-CHIP - BLM11B141S	
L8G27	409P865060	EMI-F-CHIP - BLM11B141S	
L8G29	409P865060	EMI-F-CHIP - BLM11B141S	
L8G30	409P865060	EMI-F-CHIP - BLM11B141S	
L8G31	409P865060	EMI-F-CHIP - BLM11B141S	
L8G33	409P865060	EMI-F-CHIP - BLM11B141S	
L8G34	409P865060	EMI-F-CHIP - BLM11B141S	
L8G35	409P865060	EMI-F-CHIP - BLM11B141S	
L8G36	409P865060	EMI-F-CHIP - BLM11B141S	
L8G37	409P865060	EMI-F-CHIP - BLM11B141S	
L8G38	409P865060	EMI-F-CHIP - BLM11B141S	
L8G39	409P865060	EMI-F-CHIP - BLM11B141S	
L8G42	409P865060	EMI-F-CHIP - BLM11B141S	
L8G43	409P865060	EMI-F-CHIP - BLM11B141S	
L8G44	409P865060	EMI-F-CHIP - BLM11B141S	
L8G50	409P865060	EMI-F-CHIP - BLM11B141S	
L8G51	409P865060	EMI-F-CHIP - BLM11B141S	
L8G52	409P865060	EMI-F-CHIP - BLM11B141S	
L8G62	409P777080	EMI-F-CHIP - BLM21P221S	
L9A20	321C141010	COIL-RF - 6.8MH-M	
L9A21	321C141010	COIL-RF - 6.8MH-M	
L9A34	321C141070	COIL-RF - 22MH-K	
L9A35	321C141010	COIL-RF - 6.8MH-M	
L9C51	409P777080	EMI-F-CHIP - BLM21P221S	
L9C81	409P777080	EMI-F-CHIP - BLM21P221S	b
L9D02	351P266020	LINE-FILTER - ELF22V025A	
L9D06	351P307010	LINE-FILTER - HF2430-253Y0R8-T01	
L9G21	321C141010	COIL-RF - 6.8MH-M	
L9G22	351P277020	COIL-CHOKE-CHIP - GSRH127-4R7N	
L9G23	321C140060	COIL-RF - 2.7MH-M	
L9G24	321C140060	COIL-RF - 2.7MH-M	
L9H05	321C141010	COIL-RF - 6.8MH-M	
L9H06	351P297020	COIL-CHOKE-CHIP - GSRH104R-100M	
L9H07	321C140060	COIL-RF - 2.7MH-M	
L9H10	321C141010	COIL-RF - 6.8MH-M	
L9H11	351P297010	COIL-CHOKE-CHIP - GSRH104R-470M	
L9H12	321C141010	COIL-RF - 6.8MH-M	
L9H20	321C141010	COIL-RF - 6.8MH-M	
L9H21	351P297010	COIL-CHOKE-CHIP - GSRH104R-470M	
L9H22	321C141010	COIL-RF - 6.8MH-M	
L9J01	351P297010	COIL-CHOKE-CHIP - GSRH104R-470M	
L9J02	351P297010	COIL-CHOKE-CHIP - GSRH104R-470M	
L9J03	351P297010	COIL-CHOKE-CHIP - GSRH104R-470M	
L9J04	321C141010	COIL-RF - 6.8MH-M	
L9J21	351P297010	COIL-CHOKE-CHIP - GSRH104R-470M	
L9J22	321C141010	COIL-RF - 6.8MH-M	
L9J24	321C141010	COIL-RF - 6.8MH-M	
T2001	409P961010	CHIP-FILTER - ACM2012D-9002P	b
T2002	409P961010	CHIP-FILTER - ACM2012D-9002P	b
T2003	409P961010	CHIP-FILTER - ACM2012D-9002P	b
T2004	409P961010	CHIP-FILTER - ACM2012D-9002P	b
T2101	409P961010	CHIP-FILTER - ACM2012D-9002P	
T2102	409P961010	CHIP-FILTER - ACM2012D-9002P	
T2103	409P961010	CHIP-FILTER - ACM2012D-9002P	
T2104	409P961010	CHIP-FILTER - ACM2012D-9002P	
TRANSFORMERS			
T9A10	350P835010	TRANS-PWR - ETS35AA7B3NC	

Ref #	Part #	Part Name & Description	[#]
VARISTORS			
RV9D00 265P147010 VARISTOR - ERZV10D331			
RV9D01 265P147010 VARISTOR - ERZV10D331			
RESISTORS			
CHIP Type Resistors (Listed by Value)			
Part No.	Value	Part No.	Value
103P509050	1/16W 00HM	103P492060	1/16W 1.1K-F
103P409050	1/8W 00HM	103P492070	1/16W 1.2K-F
103P408080	1/10W 4.7-J	103P502060	1/16W 1.2K-J
103P791080	1/16W 5.1-F	103P492090	1/16W 1.5K-F
103P409000	1/10W 6.8-J	103P493020	1/16W 2K-F
103P500010	1/16W 10-J	103P493030	1/16W 2.2K-F
103P480010	1/4W 10-J	103P502090	1/16W 2.2K-J
103P990010	1/16W 10-JX4	103P493040	1/16W 2.4K-F
103P400050	1/10W 22-J	103P503000	1/16W 2.7K-J
103P500050	1/16W 22-J	103P493060	1/16W 3K-F
103P990050	1/16W 22-JX4	103P493070	1/16W 3.3K-F
103P500060	1/16W 27-J	103P503010	1/16W 3.3K-J
103P500070	1/16W 33-J	103P493080	1/16W 3.6K-F
103P990070	1/16W 33-JX4	103P493090	1/16W 3.9K-F
103P793080	1/16W 36F	103P503020	1/16W 3.9K-J
103P500080	1/16W 39-J	103P494010	1/16W 4.7K-F
103P794010	1/16W 47-F	103P503030	1/16W 4.7K-J
103P500090	1/16W 47-J	103P494030	1/16W 5.6K-F
103P501000	1/16W 56-J	103P503040	1/16W 5.6K-J
103P991010	1/16W 56-JX4	103P494070	1/16W 8.2K-F
103P501010	1/16W 68-J	103P503060	1/16W 8.2K-J
103P991020	1/16W 68-JX4	103P494080	1/16W 9.1K-F
103P509090	1/16W 75-J	103P494090	1/16W 10K-F
103P489090	1/4W 75-J	103P503070	1/16W 10K-J
103P501020	1/16W 82-J	103P495000	1/16W 11K-F
103P991030	1/16W 82-JX4	103P495010	1/16W 12K-F
103P497010	1/16W 82K-F	103P495020	1/16W 13K-F
103P401030	1/10W 100-J	103P495030	1/16W 15K-F
103P490010	1/16W 100F	103P503090	1/16W 15K-J
103P501030	1/16W 100-J	103P504000	1/16W 18K-J
103P401050	1/10W 150-J	103P495070	1/16W 22K-F
103P501060	1/16W 180-J	103P504010	1/16W 22K-J
103P501070	1/16W 220-J	103P504020	1/16W 27K-J
103P991080	1/16W 220-JX4	103P496000	1/16W 30K-F
103P481070	1/4W 220-J	103P496010	1/16W 33K-F
103P401080	1/10W 270-J	103P504030	1/16W 33K-J
103P491010	1/16W 270-F	103P496030	1/16W 39K-F
103P501080	1/16W 270-J	103P496050	1/16W 47K-F
103P501090	1/16W 330-J	103P504050	1/16W 47K-J
103P491050	1/16W 390-F	103P496070	1/16W 56K-F
103P502000	1/16W 390-J	103P497000	1/16W 68K-F
103P491070	1/16W 470-F	103P504070	1/16W 68K-J
103P502010	1/16W 470-J	103P497030	1/16W 100K-F
103P491080	1/16W 510-F	103P504090	1/16W 100K-J
103P491090	1/16W 560-F	103P505000	1/16W 120K-J
103P502020	1/16W 560-J	103P505010	1/16W 150K-J
103P492010	1/16W 680-F	103P497080	1/16W 160K-F
103P502030	1/16W 680-J	103P505020	1/16W 180K-J
103P492020	1/16W 750-F	103P498030	1/16W 270K-F
103P492030	1/16W 820-F	103P505070	1/16W 470K-J
103P502040	1/16W 820-J	103P499010	1/16W 560K-F
103P492050	1/16W 1K-F	103P506000	1/16W 820K-J
103P502050	1/16W 1K-J	103P506010	1/16W 1M-J

MODEL: WD-52531 / WD-62531 / WD-62530

[#] Model Legend: (a) WD-52531, (b) WD-62530, (c) WD-62531

Ref #	Part #	Part Name & Description	[#]
RESISTORS			
Conventional Resistors (By Ref #)			
Ref #	Part #	Part Name & Description	[#]
Ref #	Part #	Part Name & Description	[#]
R1510	103C398000	R-METAL-P - 3W 1-K	
R9A01	109P179020	R-CEMT-PLT - 1.8 OHM-J	
R9A02	109P179020	R-CEMT-PLT - 1.8 OHM-J	
R9A03	109C010010	R-COMP - 1/2W 1M-K	
R9A05	109C010010	R-COMP - 1/2W 1M-K	
R9A06	109C010010	R-COMP - 1/2W 1M-K	
R9A09	103P145030	R-CARBON - 1/2W 220K-J	
R9A11	103P145030	R-CARBON - 1/2W 220K-J	
R9A13	103P145030	R-CARBON - 1/2W 220K-J	
R9A14	103P145030	R-CARBON - 1/2W 220K-J	
R9A15	103P144070	R-CARBON - 1/2W 68K-J	
R9A16	103P142090	R-CARBON - 1/2W 2.2K-J	
R9A19	103P145030	R-CARBON - 1/2W 220K-J	
R9A20	109D154010	R-CARBON - 1/4W 270-J	
R9A21	103C187050	R-METAL - 2W 0.39-J	
R9A22	103C187050	R-METAL - 2W 0.39-J	
R9A25	103P142050	R-CARBON - 1/2W 1K-J	
R9A26	109D151060	R-CARBON - 1/4W 68-J	
R9A42	109D154010	R-CARBON - 1/4W 270-J	
R9A43	109D154010	R-CARBON - 1/4W 270-J	
R9A45	103C390050	R-METAL-P - 3W 22-J	
R9A46	103P142090	R-CARBON - 1/2W 2.2K-J	
R9A48	103P145030	R-CARBON - 1/2W 220K-J	
RE100	305P706010	SWITCH-RF TYPE BABY	ac
CAPACITORS			
CHIP Type Capacitors (Listed by Value)			
Part No.	Value	Part No.	Value
154P340060	CK50V 5P-C	141P144020	F25V 0.1M-Z
154P340070	CH50V 6P-C	141P134090	F50V 0.1M-Z
154P340090	CH50V 8P-C	141P135080	F50V/25V 0.1M-Z
154P341010	CH50V 10P-C	141P146040	B10V 0.22M-K
154P341050	CH50V 15P-J	141P139070	B16V 0.22M-K
154P341070	CH50V 18P-J	141P144040	F25V/16V 0.33M-Z
154P341090	CH50V 22P-J	141P146080	B10V 0.47M-K
154P342030	CH50V 33P-J	141P139090	B16V 0.47M-K
154P342070	CH50V 47P-J	141P133000	B50V 0.47M-K
154P342090	CH50V 56P-J	141P144050	F16V 0.47M-Z
154P343030	CH50V 82P-J	141P135020	F25V 0.47M-Z
154P343050	CH50V 100P-J	141P144060	F25V 1M-Z
154P343090	CH50V 150P-J	141P134070	B16V 1M-K
141P140010	B50V 220P-K	189P245010	1M V25
154P344050	CH50V 270P-J	181P826010	50V 1M-M 105C
154P344070	CH50V 330P-J	141P147020	B10V/6.3V 1M-K
141P140040	B50V 390P-K	181P802040	16V 2.2M-M
141P140050	B50V 470P-K	141P147040	B6.3V 2.2M-K
154P345010	CH50V 470P-J	141P133010	B10V 3.3M-M
141P140060	B50V 560P-K	181P808070	16V 4.7M-M
141P140070	B50V 680P-K	181P824090	35V 4.7M-M 105C
154P345050	CH25V 680P-J	141P136080	B25V 4.7M-K
141P140090	B50V 1000P-K	141P147060	B6.3V 4.7M-K
154P345090	CH25V 1000P-J	189P243010	10M 6.3V
141P141030	B50V 2200P-K	181P808080	16V 10M-M
141P141040	B50V 2700P-K	181P802030	16V 10M-M
141P141070	B50V 4700P-K	181P822030	16V 10M-M 105C

Ref #	Part #	Part Name & Description	[#]
141P141080	B50V 5600P-K	181P826050	50V 10M-M 105C
141P142000	B50V 8200P-K	189P243020	10M 25V
141P142010	B50V 0.01M-K	181P820010	6.3V 22M-M 105C
141P133080	B50V 0.01M-Z	189P243040	22uM 25V
141P143080	F50V 0.01M-Z	181P820030	6.3V 47M-M 105C
141P132030	B50V 0.015M-K	181P802060	16V 47M-M
141P142040	B50/25/16V 0.018M-K	181P802070	16V 100M-M
141P142050	B25V 0.022M-K	181P822070	16V 100M-M 105C
141P142070	B25V 0.033M-K	181P828000	4V 100M-M 105C
141P142090	B25V 0.047M-K	181P820040	6.3V 100M-M 105C
141P144010	F50V 0.047M-Z	181P800040	6.3V 100M-M
141P143010	B25V 0.068M-K	181P828010	4V 220M-M 105C
141P143020	B16V 0.082M-K	181P820050	6.3V 220M-M 105C
141P143030	B16V 0.1M-K	181P800060	6.3V 220M-M
CAPACITORS AND TRIMMERS			
Conventional Capacitors (By Ref #)			
Ref #	Part #	Part Name & Description	[#]
C3E45	181P735030	C-ELEC - 25V 1000M-M 105C	
C3E48	181P735030	C-ELEC - 25V 1000M-M 105C	
C3E65	181P735030	C-ELEC - 25V 1000M-M 105C	
C3E68	181P735030	C-ELEC - 25V 1000M-M 105C	
C7E01	181P350060	C-ELEC - 3V 1000M-M	
C7K01	181P352030	C-ELEC - 16V 47M-M	
C8281	189P252010	C-ELE-DBL-LYR - EECSE0H473	
C9A00	189P185090	C-CER - AC250V E2200P-M	
C9A01	189P185090	C-CER - AC250V E2200P-M	
C9A02	185D122040	C-ELEC - H200V 820M-M	
C9A03	185D122040	C-ELEC - H200V 820M-M	
C9A05	189P185090	C-CER - AC250V E2200P-M	
C9A06	189P185090	C-CER - AC250V E2200P-M	
C9A08	189P185090	C-CER - AC250V E2200P-M	
C9A09	189P185090	C-CER - AC250V E2200P-M	
C9A10	189P185090	C-CER - AC250V E2200P-M	
C9A11	189P185090	C-CER - AC250V E2200P-M	
C9A12	154P400060	C-CER - B1KV 1500P-K	
C9A13	189P152080	C-M-POLY - AC125/250V 0.015M-M	
C9A14	189P152080	C-M-POLY - AC125/250V 0.015M-M	
C9A19	154P400050	C-CER - B1KV 1000P-K	
C9A21	181P185060	C-ELEC - 50V 10M-M 105C	
C9A26	185D122040	C-ELEC - H200V 820M-M	
C9A28	181P735020	C-ELEC - 25V 1000M-M 105C	
C9A29	181P735020	C-ELEC - 25V 1000M-M 105C	
C9A30	181P355010	C-ELEC - 50V 1M-M	
C9A31	142P010090	C-CER - B500V 470P-K	
C9A32	181P735020	C-ELEC - 25V 1000M-M 105C	
C9A33	181P735020	C-ELEC - 25V 1000M-M 105C	
C9A34	154P400060	C-CER - B1KV 1500P-K	
C9A35	181P735020	C-ELEC - 25V 1000M-M 105C	
C9A39	181P184070	C-ELEC - 35V 2200M-M	
C9A45	181P351070	C-ELEC - 10V 470M-M	
C9A46	142P010090	C-CER - B500V 470P-K	
C9D01	189P153060	C-M-POLY-AC - AC125/250V 0.22M-M	
C9D03	189P153060	C-M-POLY-AC - AC125/250V 0.22M-M	
C9H13	181P732000	C-ELEC - 10V 680M-M 105C	
C9H15	181P352070	C-ELEC - 16V 470M-M	
C9H20	181P738010	C-ELEC - 50V 220M-M 105C LOW-R	
C9H24	181P352070	C-ELEC - 16V 470M-M	
C9H26	181P352070	C-ELEC - 16V 470M-M	

MODEL: WD-52531 / WD-62531 / WD-62530

[#] Model Legend: (a) WD-52531, (b) WD-62530, (c) WD-62531

Ref #	Part #	Part Name & Description	[#]
C9H28	181P354040	C-ELEC - 50V 10M-M	
C9H30	181P738010	C-ELEC - 50V 220M-M 105C LOW-R	
C9H32	181P352070	C-ELEC - 16V 470M-M	
C9H34	181P352070	C-ELEC - 16V 470M-M	
C9J01	181P354090	C-ELEC - 35V 470M-M	
C9J02	181P738010	C-ELEC - 50V 220M-M 105C LOW-R	
C9J04	181P354090	C-ELEC - 35V 470M-M	
C9J05	181P738010	C-ELEC - 50V 220M-M 105C LOW-R	
C9J07	181P354090	C-ELEC - 35V 470M-M	
C9J08	181P738010	C-ELEC - 50V 220M-M 105C LOW-R	
C9J15	181P355050	C-ELEC - 50V 10M-M	
C9J21	181P738010	C-ELEC - 50V 220M-M 105C LOW-R	
C9J23	181P735010	C-ELEC - 25V 470M-M	
C9J24	181P352070	C-ELEC - 16V 470M-M	
SWITCHES			
S7F01	434P004010	LAMP SWITCH	
S7L20	432P109010	SW-KEY BOARD - KSHS611BT	
S7L21	432P109010	SW-KEY BOARD - KSHS611BT	
S7L22	432P109010	SW-KEY BOARD - KSHS611BT	
S7L23	432P109010	SW-KEY BOARD - KSHS611BT	
S7L24	432P109010	SW-KEY BOARD - KSHS611BT	
S7L25	432P109010	SW-KEY BOARD - KSHS611BT	
S7L26	432P109010	SW-KEY BOARD - KSHS611BT	
S7L27	432P109010	SW-KEY BOARD - KSHS611BT	
S7L28	432P109010	SW-KEY BOARD - KSHS611BT	
S7L29	432P109010	SW-KEY BOARD - KSHS611BT	
MISCELLANEOUS			
096Z465030	TAPE-LENS		bc
246C351060	AC POWER CORD		
246C561040	CABLE-DVI		
299P287010	FAN-COOLING - BALLAST		
299P288010	FAN-COOLING - EXHAUST		
411D044020	CORE-FERRITE - ZCAT2032-0930		
411D062010	CORE-FERRITE - ZCAT1518-0730		
480P083010	SPEAKER - 10W		
593B215010	HOLDER-MIRROR		a
593B215020	HOLDER-MIRROR		bc
620D204010	TAPE-MIRROR		
620D204020	TAPE-BEZEL		
622C494020	CUSHION-MIRROR-BTM		
622C516010	CUSHION-FRONT-INPUT		bc
622C516020	CUSHION-MIRROR-HOLDER		bc
622C516030	CUSHION-MIRROR-HOLDER		a
622C517010	COVER-FOAM-LENS		
622C518010	SPACER-LENS		
622D484010	HOLDER-LED		
642C431010	CATCH-GRILLE		
642C432010	STRIKER - SPEAKER GRILL		
669D735010	ENGINE LOCKING SCREW		
669D736010	SCREW-ENGINE-ADJ 16mm		
674D142010	LOCKNUT-NYLON INSERT		
683D169010	ENGINE LOCKING -SPRING		
704B226010	BUTTONS-FRONT		ac
704B226030	BUTTONS		b

Ref #	Part #	Part Name & Description	[#]
	750A575010	BOX-MIRROR	a
	750A576010	BOX-MIRROR	bc
	750A577010	COVER-BACK	
	761A324010	BASE-COMMON	
	761A340010	GRILL-SPEAKER	a
	761A342010	GRILL-SPEAKER	bc
	761B452010	COVER-LAMP	
	761B455010	COVER-SIDE ACCESS	
	761D981010	COVER-LED INDICATOR	
	767D083020	MIRROR - 52"	a
	767D083040	MIRROR - 62"	bc
	771D127010	PAD - CABINET BTM	
	915P043010	LAMP-CARTRIDGE	
	938P054010	OPTICAL-ENGINE-52" LCD	a
	938P054020	OPTICAL-ENGINE-62" LCD	bc
	938P055010	BALLAST-POWER-LAMP	
AG9D00	299P220020	SURGE-SUPPRESSOR - DSS-302M	
F9A01	283P144080	FUSE - 125V 5A	
F9A03	283P146010	FUSE - 72V 15A	
F9A05	283P144080	FUSE - 125V 5A	
F9A06	283P144080	FUSE - 125V 5A	
F9A07	283P144080	FUSE - 125V 5A	
F9D00	283D141040	FUSE - S10A 125V	
F9G21	283P075090	FUSE-CHIP - FCC20252ADTP	
F9H01	283P075090	FUSE-CHIP - FCC20252ADTP	
F9H03	283P075090	FUSE-CHIP - FCC20252ADTP	
F9J01	283P075090	FUSE-CHIP - FCC20252ADTP	
F9J02	283P075090	FUSE-CHIP - FCC20252ADTP	
J2001	452C410010	CONNECTOR-HDMI	b
J2101	452C410010	CONNECTOR-HDMI	
J8202	452C401010	CONNECTOR-USB	
J8301	440C393030	PIN-JACK-BOARD-1P	ac
J8F01	452C371020	CONNECTOR-DVI	
K9A10	287P111030	RELAY-POWER - LKS1AF-12V	
K9A20	287P111030	RELAY-POWER - LKS1AF-12V	
K9A21	287P111030	RELAY-POWER - LKS1AF-12V	
PB	452C411020	CONNECTOR-PCCARD	ac
PC9A10	268P115020	PHOTO-COUP - SFH615A-3	
PC9A21	268P115020	PHOTO-COUP - SFH615A-3	
PJ2J01	440C456020	PIN-JACK-BOARD-2S	
PJ2J02	440C457010	PIN-JACK-BOARD-9P	
PJ2J03	440C458010	PIN-JACK-BOARD-6P	
PJ2J04	440C460010	PIN-JACK-BOARD-4P	
PJ2J05	440C459020	PIN-JACK-BOARD-6P	
PJ2J05	440C460010	PIN-JACK-BOARD-4P	b
PJ2J11	440C412060	PIN-JACK-BOARD-3P-1S	
TU100	295P540010	TUNER-NTSC/ATSC	ac
TU100	295P540020	TUNER-NTSC/ATSC	
X1500	285P459080	QTZ-CRYST - 25.140MHZ	ac
X2296	285P459090	QTZ-CRYST - 28.322MHZ	b
X7A13	285P459040	QTZ-CRYST - 16MHZ	
X7G01	285P431040	QTZ-CRYST - 27.00MHz	
X8001	285P464020	QTZ-CRYST - 26.1621MHz	
X8201	285P403020	QTZ-CRYST - 32.768MHZ	
X8301	285P464010	QTZ-CRYST - 7.3728MHZ	ac
X8501	285P464030	QTZ-CRYSTAL - 18.24MHz	ac
X8G01	299P311010	CERAMIC-OSC - CSTCG24M0	
Z7K01	938P005010	UNIT-PREAMP - GP1UM283QK	

MODEL: WD-52531 / WD-62531 / WD-62530

[#] Model Legend: (a) WD-52531, (b) WD-62530, (c) WD-62531

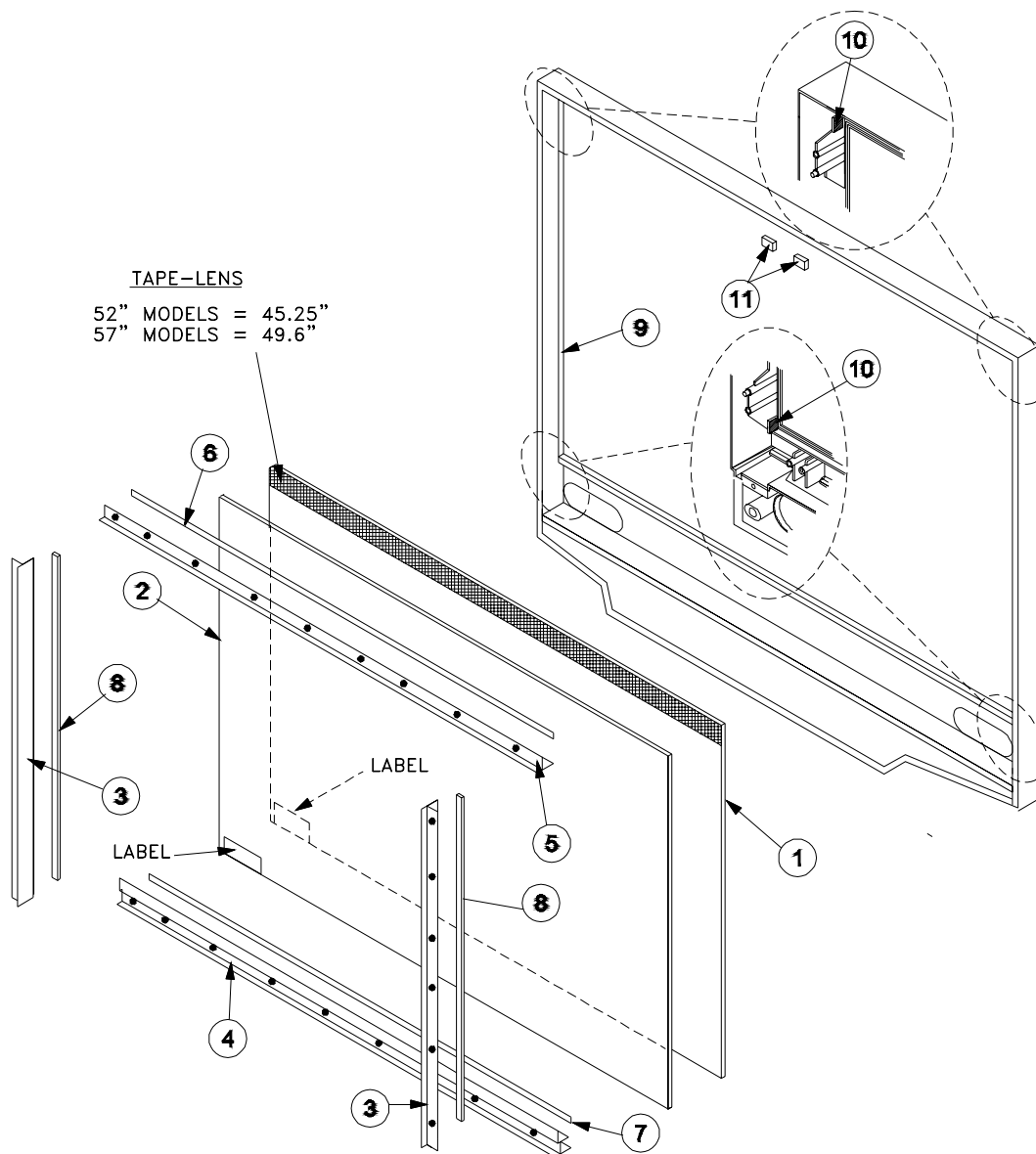
Ref #	Part #	Part Name & Description	[#]
PRINTED CIRCUIT BOARDS			
	930B943001	ASSY-PWB-POWER	
	934C216001	ASSY-PWB-SIGNAL	ac
	934C216002	ASSY-PWB-SIGNAL	b
	934C218001	ASSY-PWB-DM	ac
	934C218002	ASSY-PWB-DM	b
	934C220001	ASSY-PWB-INTERFACE	
	935D884001	ASSY-PWB-PREAMP	
	935D885001	ASSY-PWB-FRONT	
	935D887001	ASSY-PWB-SW-LAMP	
	935D888001	ASSY-PWB-CONTROL	

Ref #	Part #	Part Name & Description	[#]
COSMETIC PARTS			
	716C044010	BADGE - BRAND	
	760A020010	INLAY-CHASSIS	ac
	760A020020	INLAY-CHASSIS	b
ACCESSORIES			
	290P137010	REMOTE-CONTROL	
	IB WD52531	OWNERS GUIDE	
	I/QR WD52531	QUICK REFERENCE GUIDE	

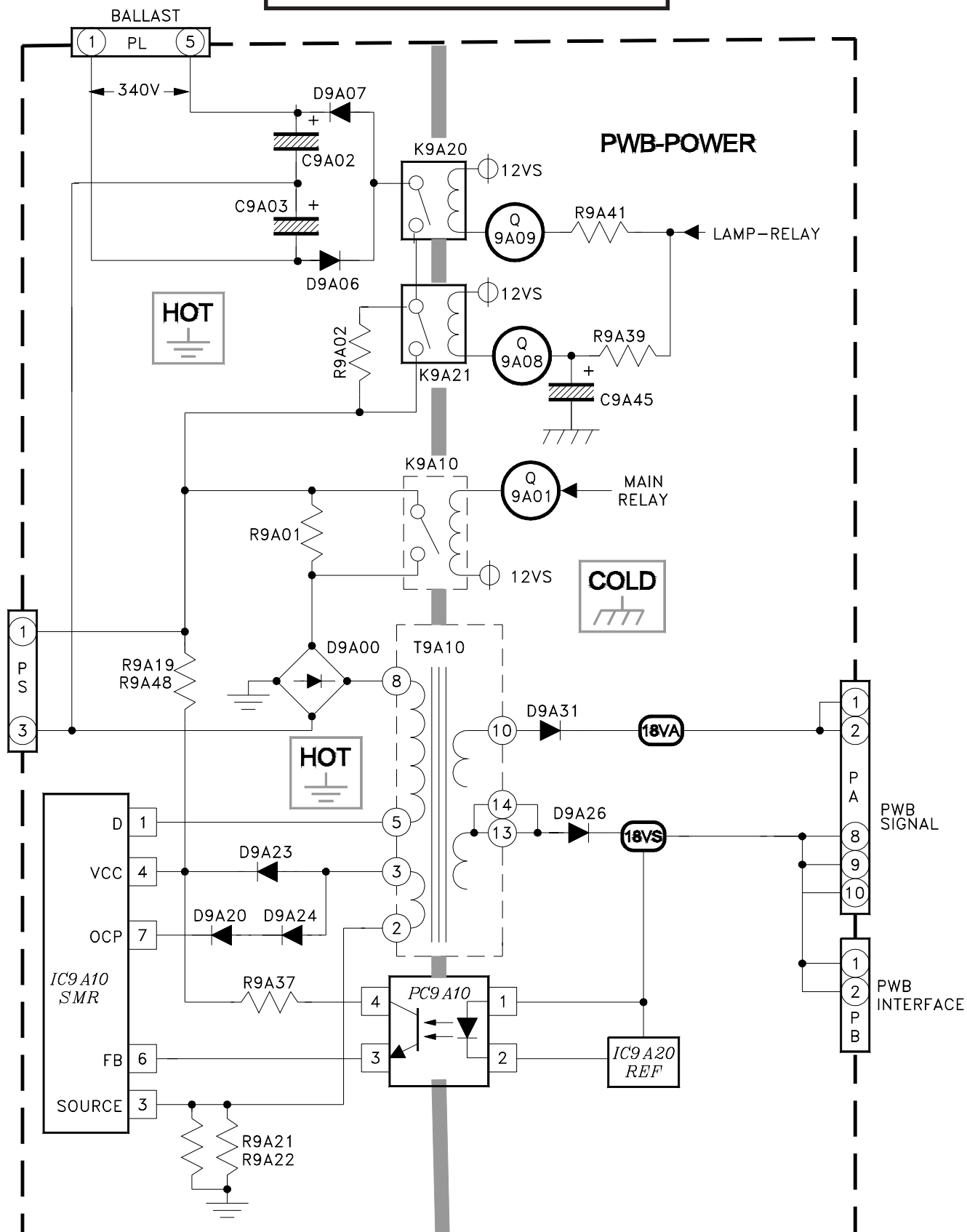
MODEL: WD-52531 / WD-62531 / WD-62530

[#] Model Legend: (a) WD-52531, (b) WD-62530, (c) WD-62531

Ref #	Part #	Part Name & Description	[#]	Ref #	Part #	Part Name & Description	[#]
SCREEN ASSEMBLY PARTS				WD-62530 / WD-62531			
WD-52531				(1)	491P199060	SCREEN-LENTICULAR	
(1)	491P199050	SCREEN-LENTICULAR		(2)	491P202060	LENS-FRESNEL	
(2)	491P202050	LENS-FRESNEL		(3)	593B211040	SCREEN-HOLDER-S	
(3)	593B211020	SCREEN-HOLDER-S		(4)	593B212030	SCREEN-HOLDER-B	
(4)	593B212020	SCREEN-HOLDER-B		(5)	593B214040	SCREEN-HOLDER-T	
(5)	593B214020	SCREEN-HOLDER-T		(6)	622C455010	SCREEN-CUSHION-TOP	
(6)	622C455040	SCREEN-CUSHION-TOP		(7)	622C474010	SCREEN-CUSHION-BTM	
(7)	622C474040	SCREEN-CUSHION-BTM		(8)	622C474060	SCREEN-CUSHION-SIDE	
(8)	622C474080	SCREEN-CUSHION-SIDE		(9)	761A341010	BEZEL-FRONT (WD-62531)	
(9)	761A339010	BEZEL-FRONT		(9)	761A341020	BEZEL-FRONT (WD-62530)	
(10)	622C487010	SCREEN-CUSHION-CORNER		(10)	622C487010	SCREEN-CUSHION-CORNER	
(11)	622C487020	SCREEN-SPACER-TOP-SMALL		(11)	622C487020	SCREEN-SPACER-TOP-SMALL	

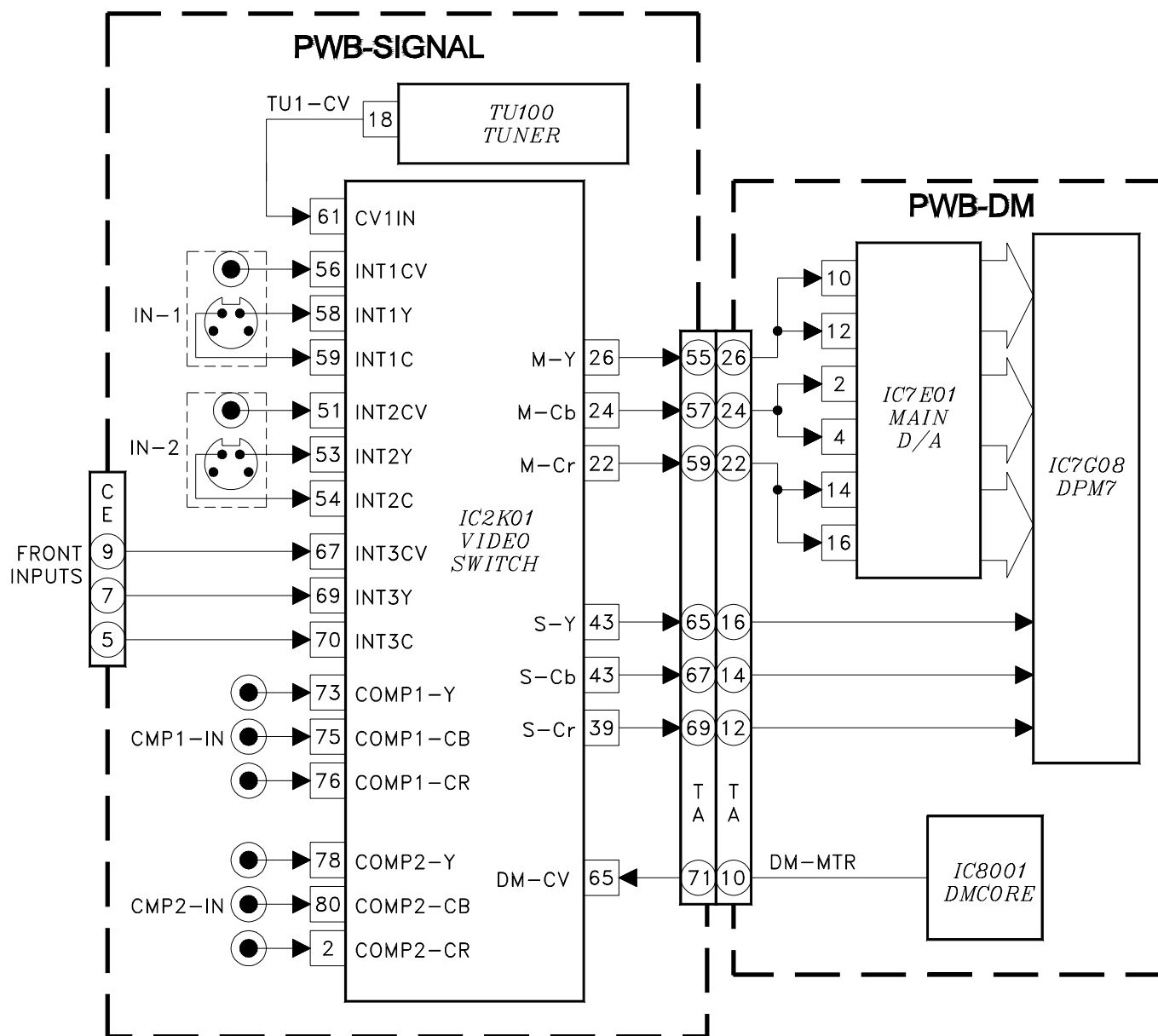


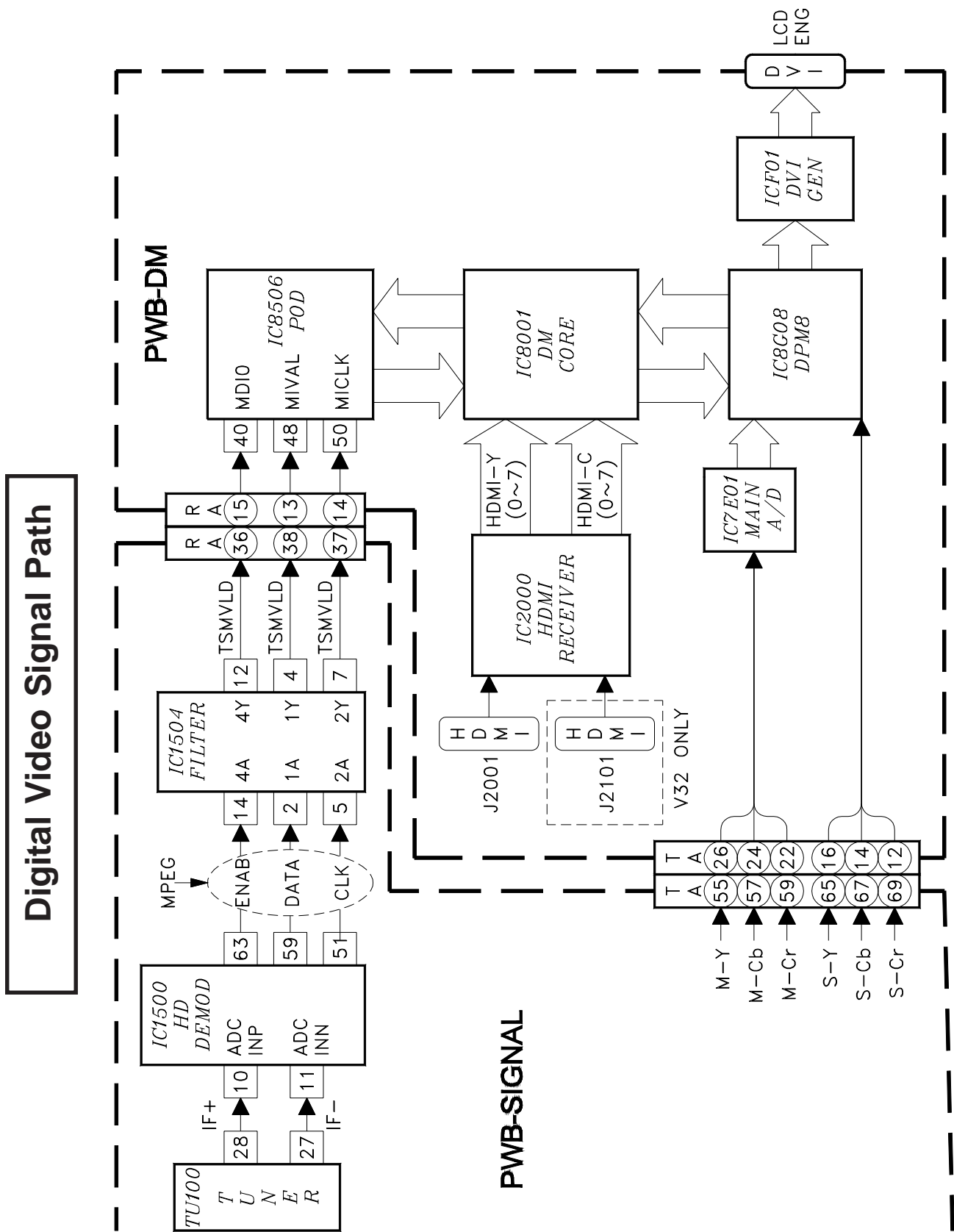
MAIN POWER SUPPLY



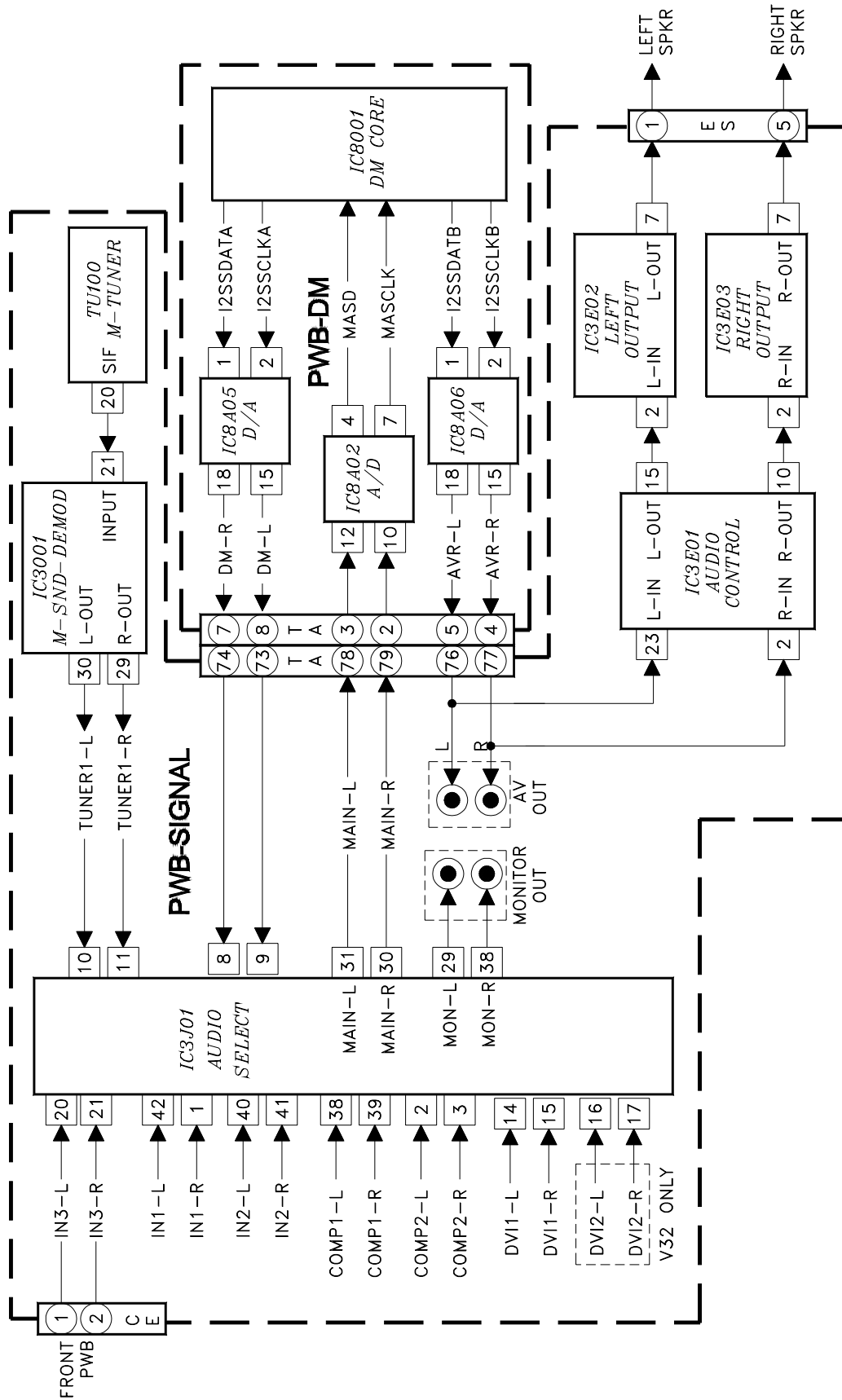


Analog Video Signal Path

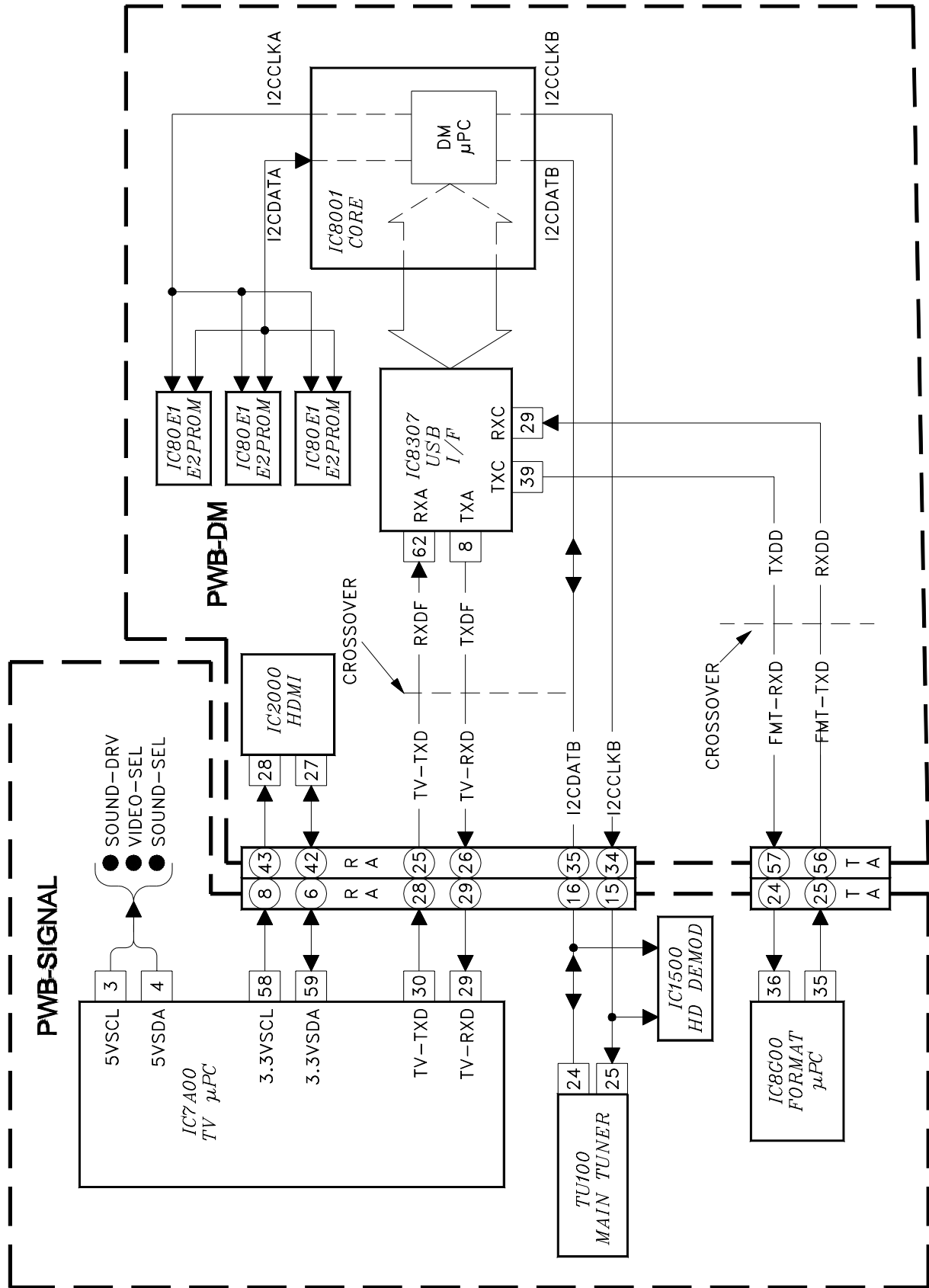




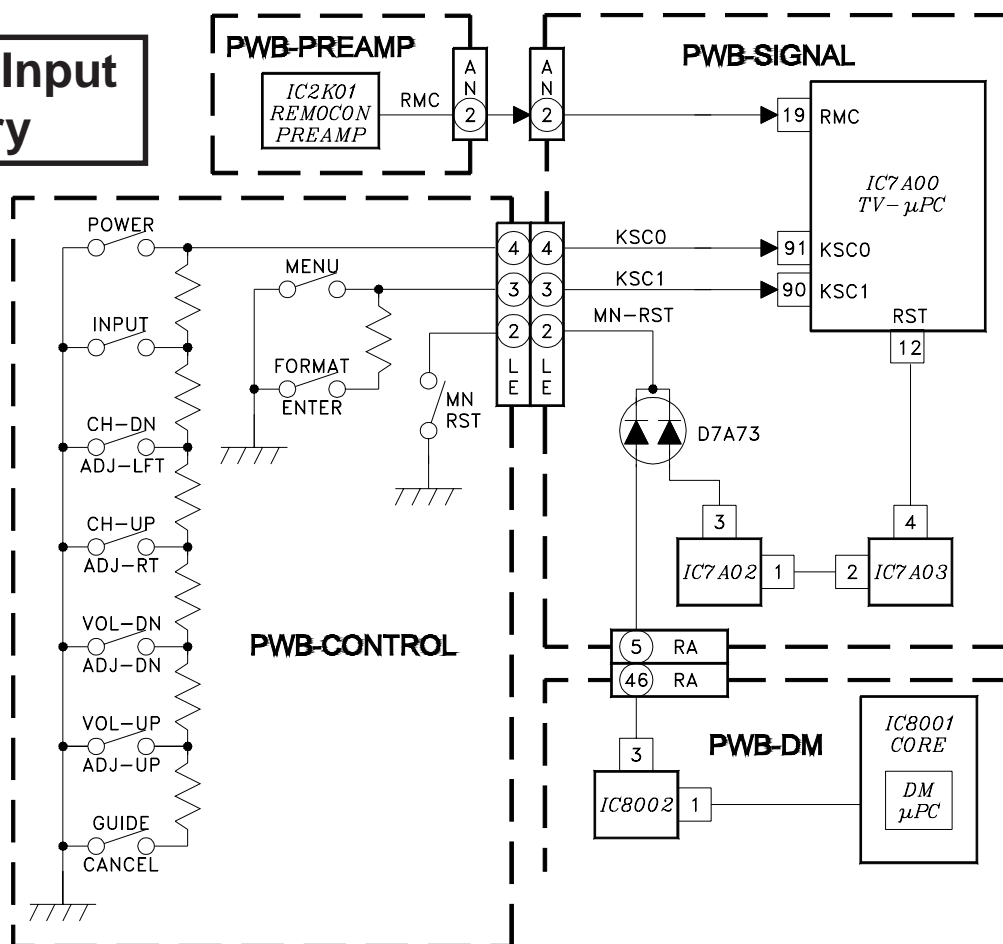
Sound Signal Path



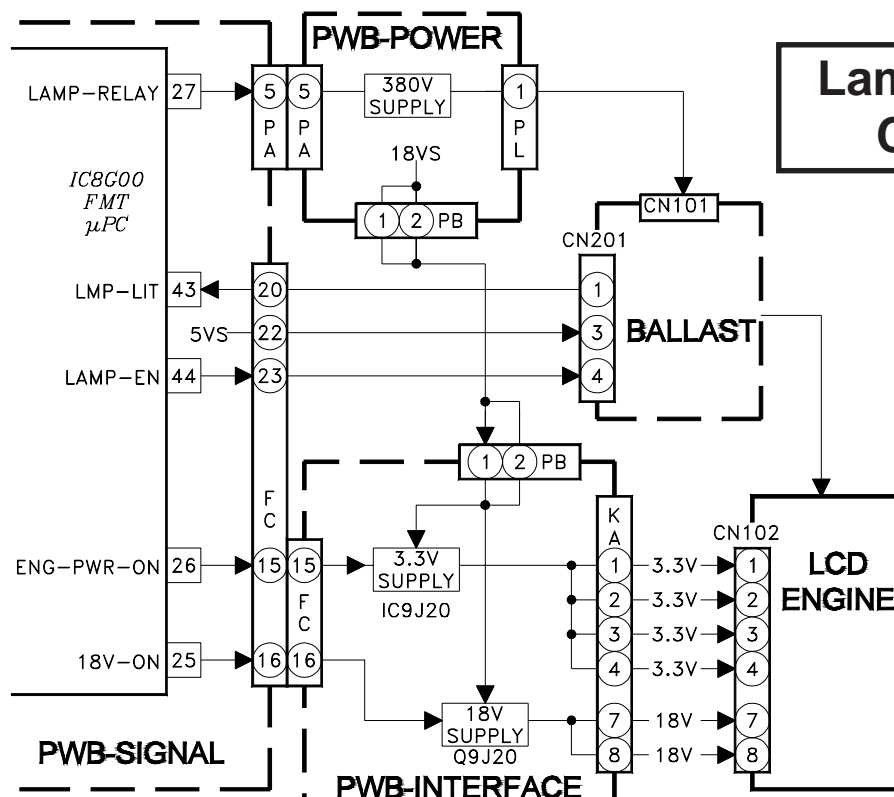
Overall Control Circuitry



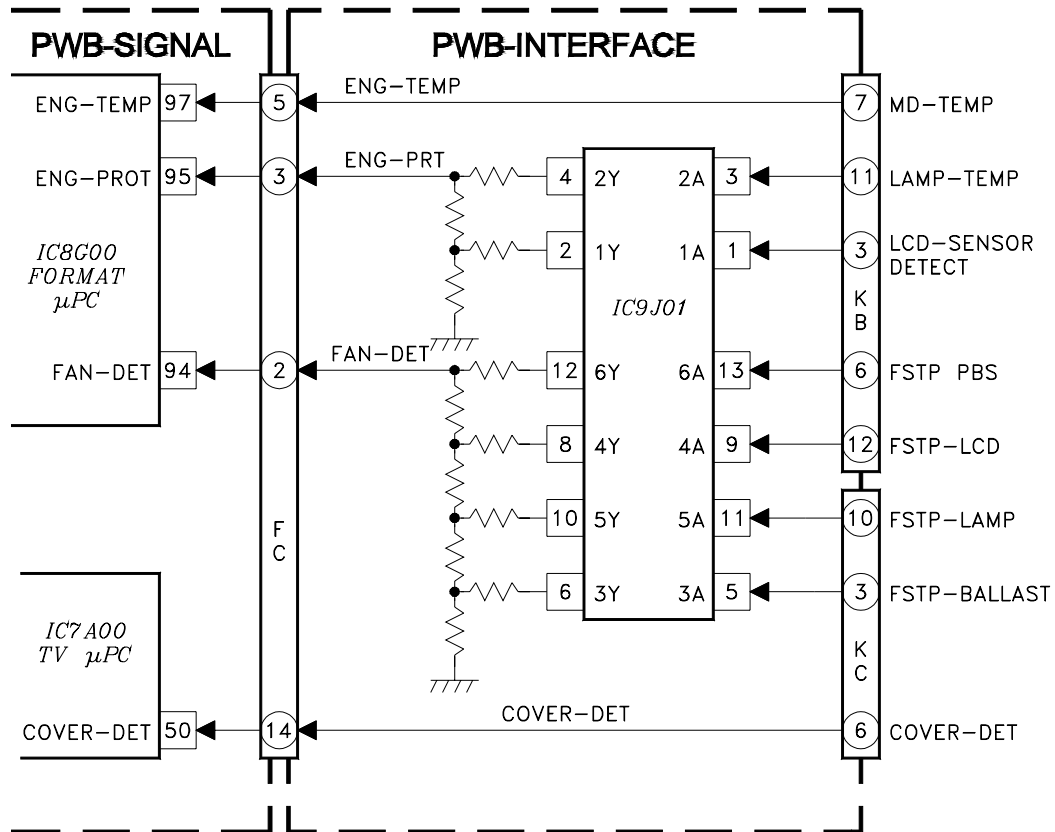
Command Input Circuitry



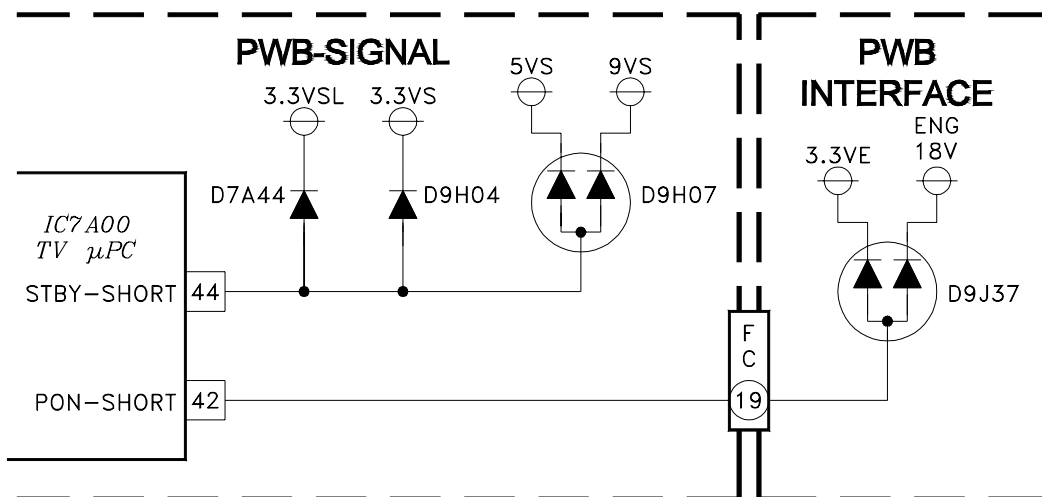
Lamp Control Circuitry



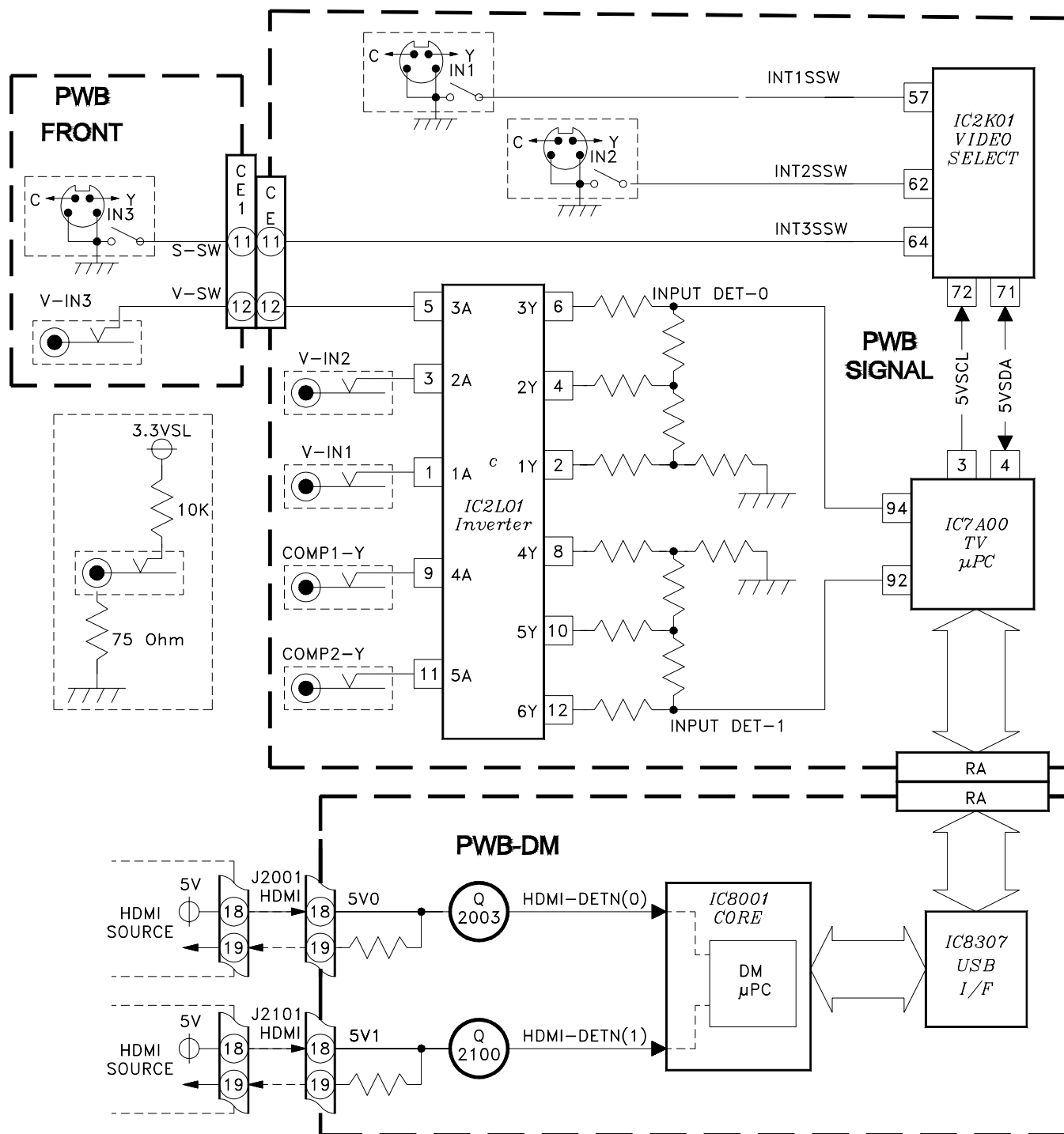
LCD Engine Protect Circuitry



Short Protect Circuitry



Auto Input Detection



* NOTES

1. DC voltages were measured from points indicated to the circuit ground with a high-Z voltmeter.
2. Wave form were taken with standard color bar signal.
3. TP11, etc. show test points.
4. CAPACITOR

Value	Not indicated	[0 for numbers more than 1 1 for numbers less than 1]
Dielectric strength	Not indicated	: 50V
Tolerance	Not indicated	$\pm 10\%$ for electrolytic capacitor and $\pm 20\%$
Type	Not indicated	: Ceramic capacitor : Polyester capacitor : Polypropylene film capacitor : Aluminum electrolytic capacitor : Thin film capacitor : Multi-conductor Ceramic capacitor : Metalized paper : Metalized plastic film capacitor : Metalized polyester capacitor : Polypropylene film capacitor : Non polarized electrolytic capacitor : Tantalum capacitor : Electrolytic capacitor : Non polarized electrolytic capacitor : Non polarized electrolytic capacitor chip : Electrolytic capacitor : Non polarized electrolytic capacitor chip
Characteristics (Only ceramic capacitor)	Not indicated	: F or M (high dielectric percentage) : 2W, 5W, etc. : Temperature compensating types

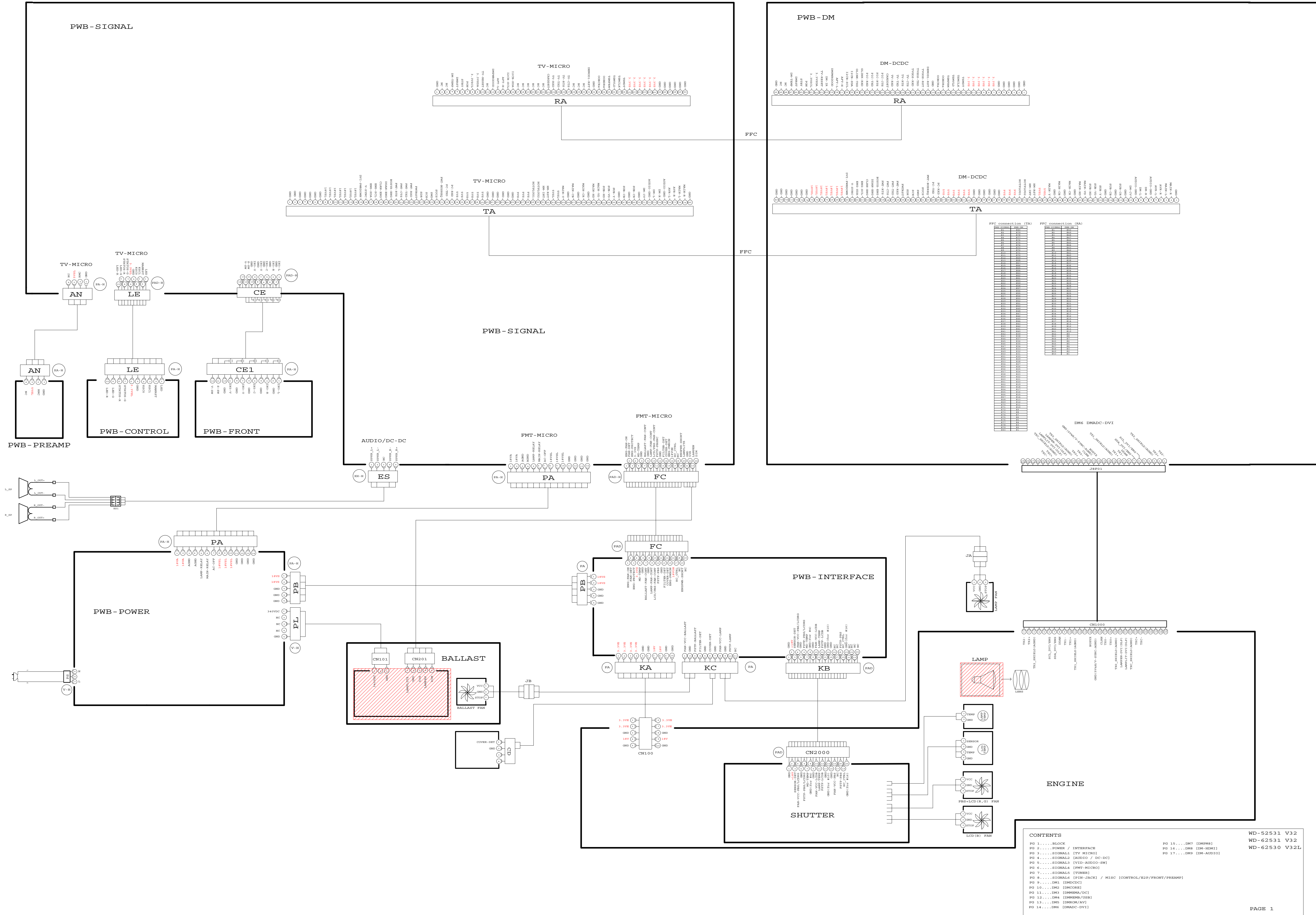
Value	Not indicated	: Ohm : 1,000 Ohm : 1,000,000 Ohm
Wattage	Parts except for chips	Not indicated : 1/4W or 1/2W : Not indicated : 1/10W
Voltage	Not indicated	$\pm 5\%$ $\pm 10\%$ $\pm 15\%$ $\pm 20\%$
Type	Parts except for chips	Not indicated : Carbon resistor : Fixed composition resistor : Metal oxide film resistor (Type B) : Cemented resistor : Wire wound resistor : Metal film resistor : Metal plate cement resistor : Metal liner resistor
II	chips	Not indicated : chip resistor

4. This is a basic schematic diagram. Some sets may be subject to modification according to engineering improvement.

SHADE COMPONENTS HAVE SPECIAL CHARACTERISTICS IMPORTANT TO SAFETY. BEFORE REPLACING ANY OF THESE COMPONENTS, READ CAREFULLY THE PRODUCT SAFETY NOTICE IN THE SERVICE MANUAL. DON'T DEGRADE THE SAFETY OF THE RECEIVERS THROUGH IMPROPER SERVICING.

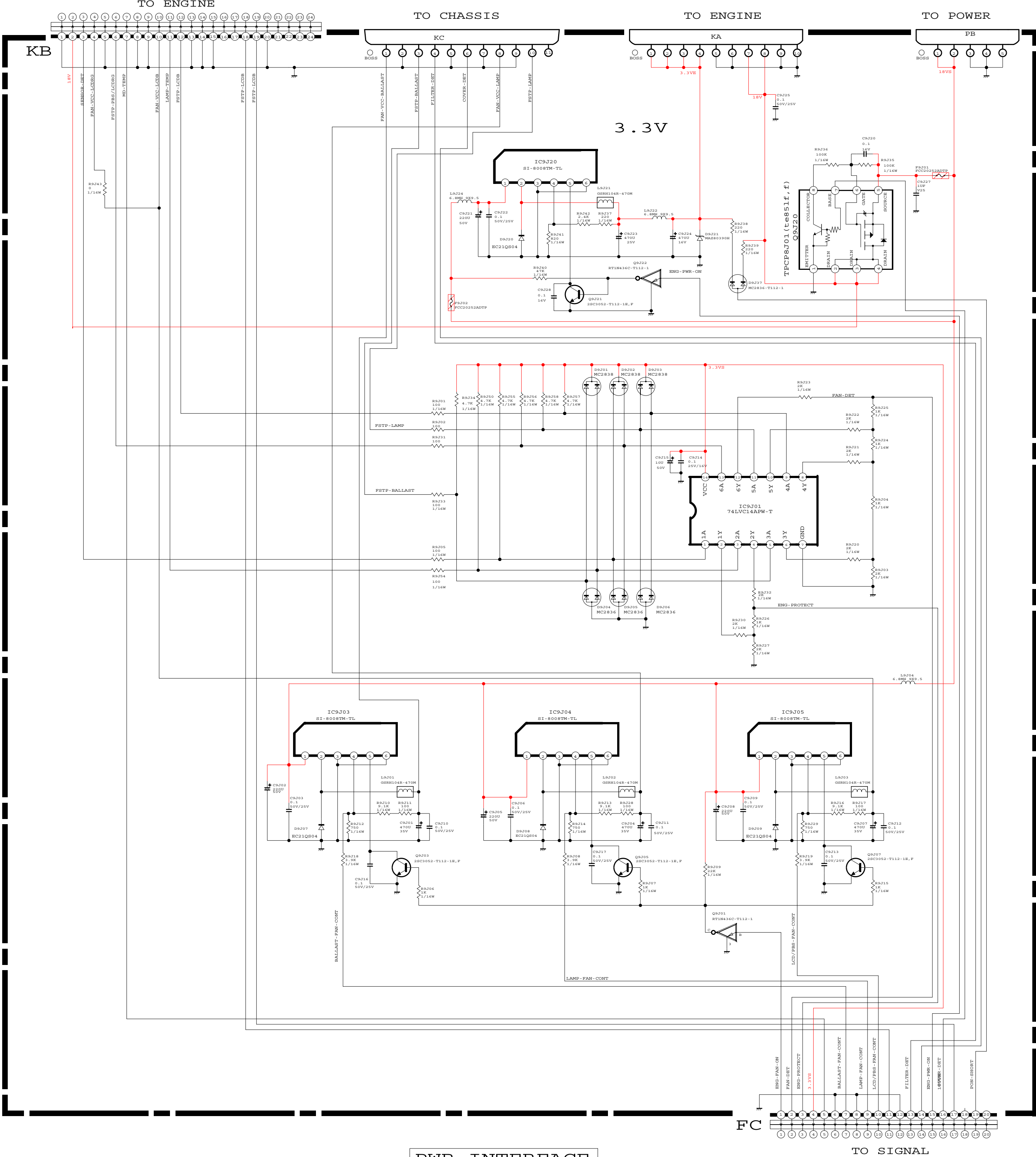
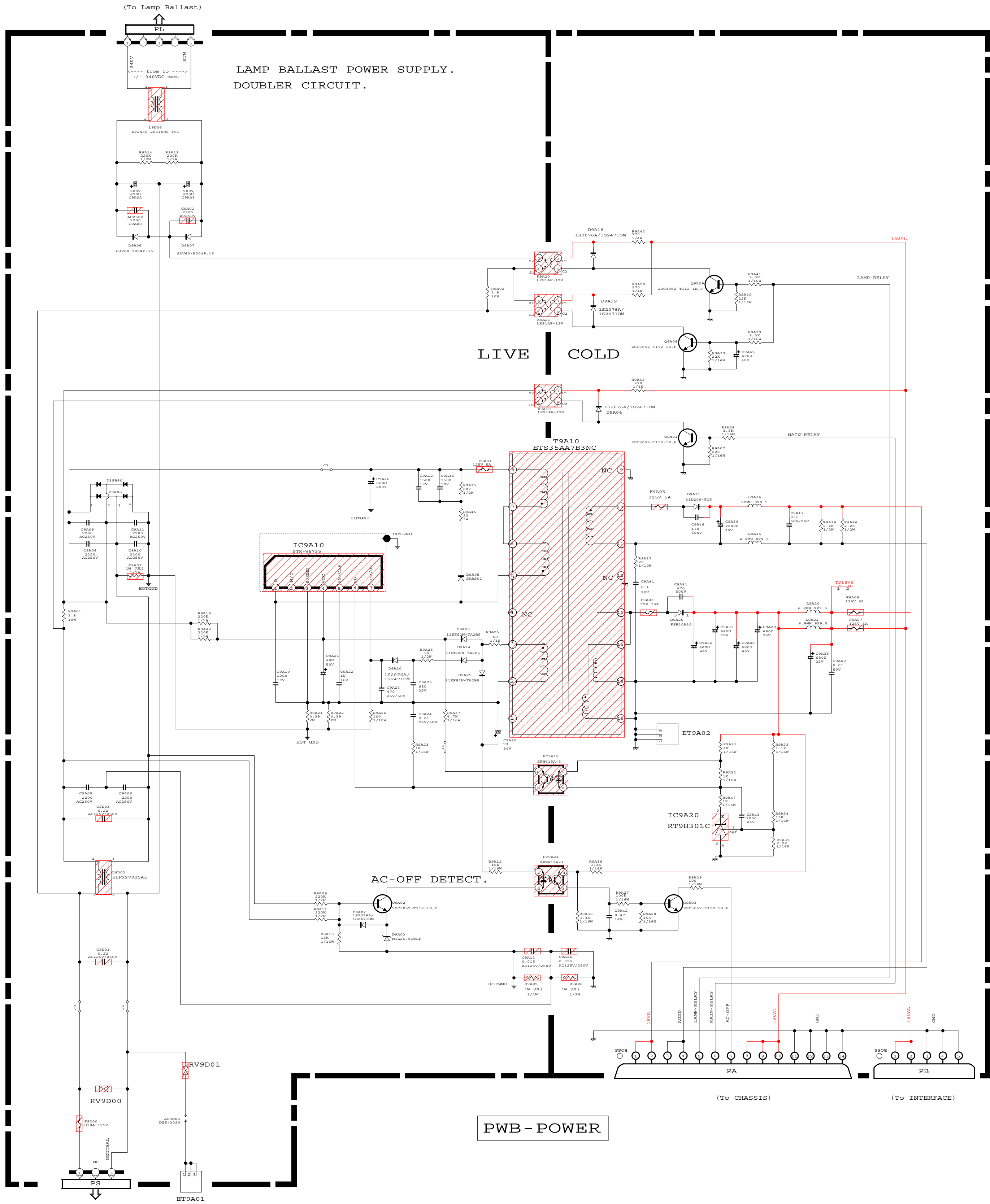
SERVICE TECHNICIAN WARNING;
X-RADIATION PRECAUTION
THIS PRODUCT INCLUDES CRITICAL ELECTRICAL AND MECHANICAL PARTS ESSENTIAL FOR X-RADIATION PROTECTION TO AVOID POSSIBLE TO X-RADIATION TAKE RADIATION PROTECTIVE MEASURE FOR PERSONNEL KNOWING SERVICING.
SEE SERVICE INSTRUCTION FOR SPECIFIED REPLACEMENT PARTS AND SERVICE ADJUSTMENTS.

PG 1 BLOCK	PG 15 DM7 [IMPWB]	WD-52531 V32
PG 2 POWER / INTERFACE	PG 16 DM8 [DM-HDMI]	WD-62531 V32
PG 3 SIGNAL1 [TV MICRO]	PG 17 DM9 [DM-AUDIO]	WD-62530 V32L
PG 4 SIGNAL2 [AUDIO / DC-DC]		
PG 5 SIGNAL3 [VID-AUDIO-SW]		
PG 6 SIGNAL4 [PMT-MICRO]		
PG 7 SIGNAL5 [TUNER]		
PG 8 SIGNAL6 [PIN-JACK] / MISC [CONTROL/ESP/FRONT/PREAMP]		
PG 9 DM1 [DMCORE]		
PG 10 DM2 [DMCORE]		
PG 11 DM3 [DMCORE/DC]		
PG 12 DM4 [DMCORE/DC]		
PG 13 DM5 [DMCORE/AV]		
PG 14 DM6 [DMCORE-DVI]		



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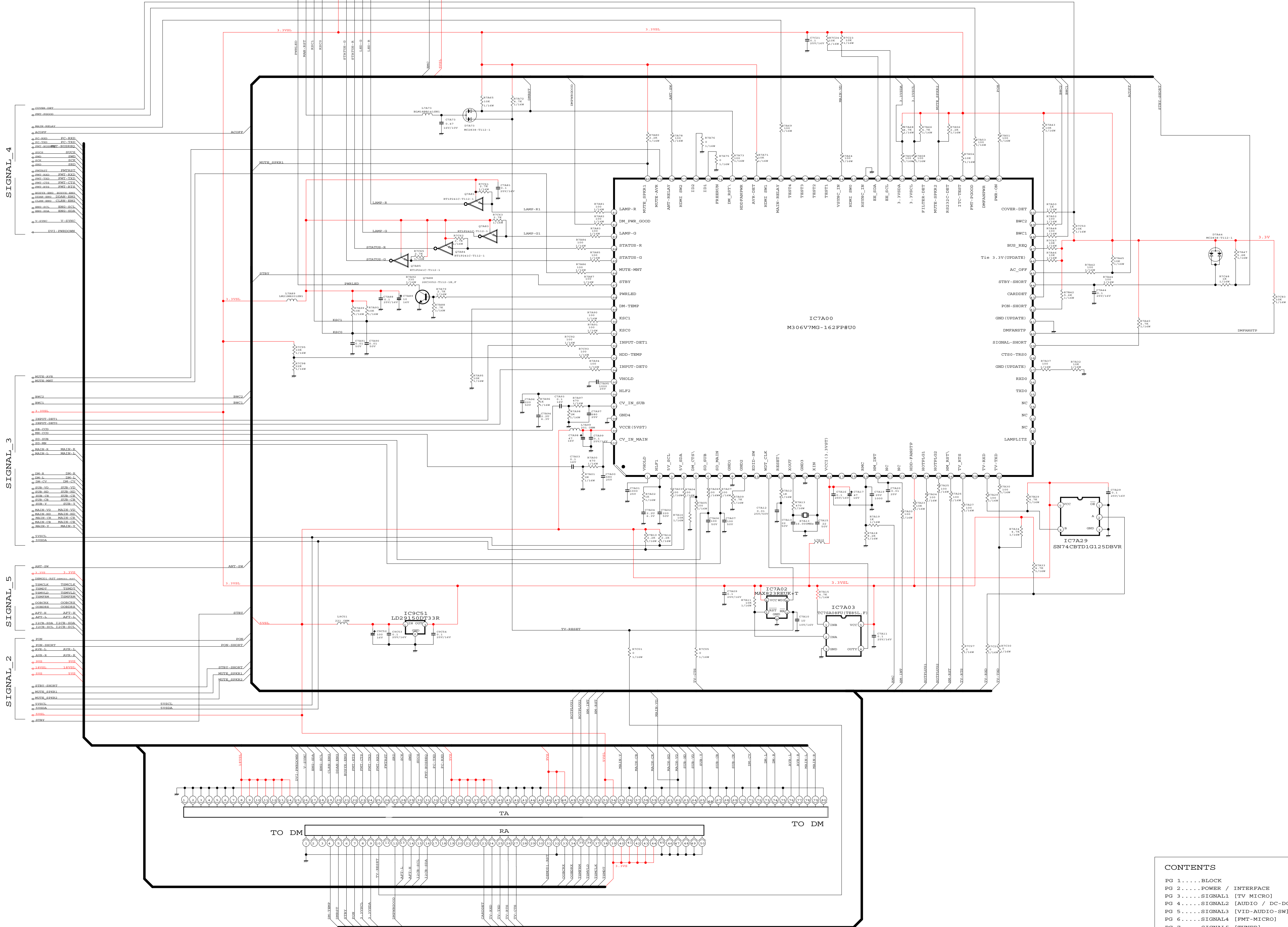
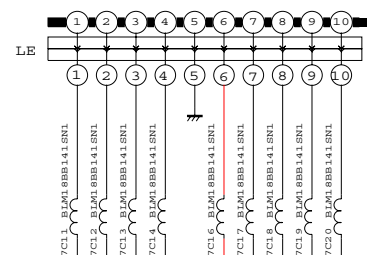
PG 2.....POWER / INTERFACE



CONTENTS			WD-52531 V32
PG 1.....BLOCK			
PG 2.....POWER / INTERFACE			
PG 3.....SIGNAL1 [TV MICRO]			
PG 4.....SIGNAL2 [AUDIO / DC-DC]			
PG 5.....SIGNAL3 [VID-AUDIO-SW]			
PG 6.....SIGNAL4 [FMT-MICRO]			
PG 7.....SIGNAL5 [TUNER]			
PG 8.....SIGNAL6 [PIN-JACK] / MISC [CONTROL/E2P/FRONT/PREAMP]			
PG 9.....DM1 [DMDCDC]			
PG 10.....DM2 [DMCORE]			
PG 11.....DM3 [DMHDMI/DC]			
PG 12.....DM4 [DMMEMB/USB]			
PG 13.....DM5 [DMROM/AV]			
PG 14.....DM6 [DMADC-DVI]			
PG 15.....DM7 [DMPM8]			
PG 16.....DM8 [DM-HDMI]			
PG 17.....DM9 [DM-AUDIO]			
WD-62531 V32			
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TO CONTROL

TO PREAMP

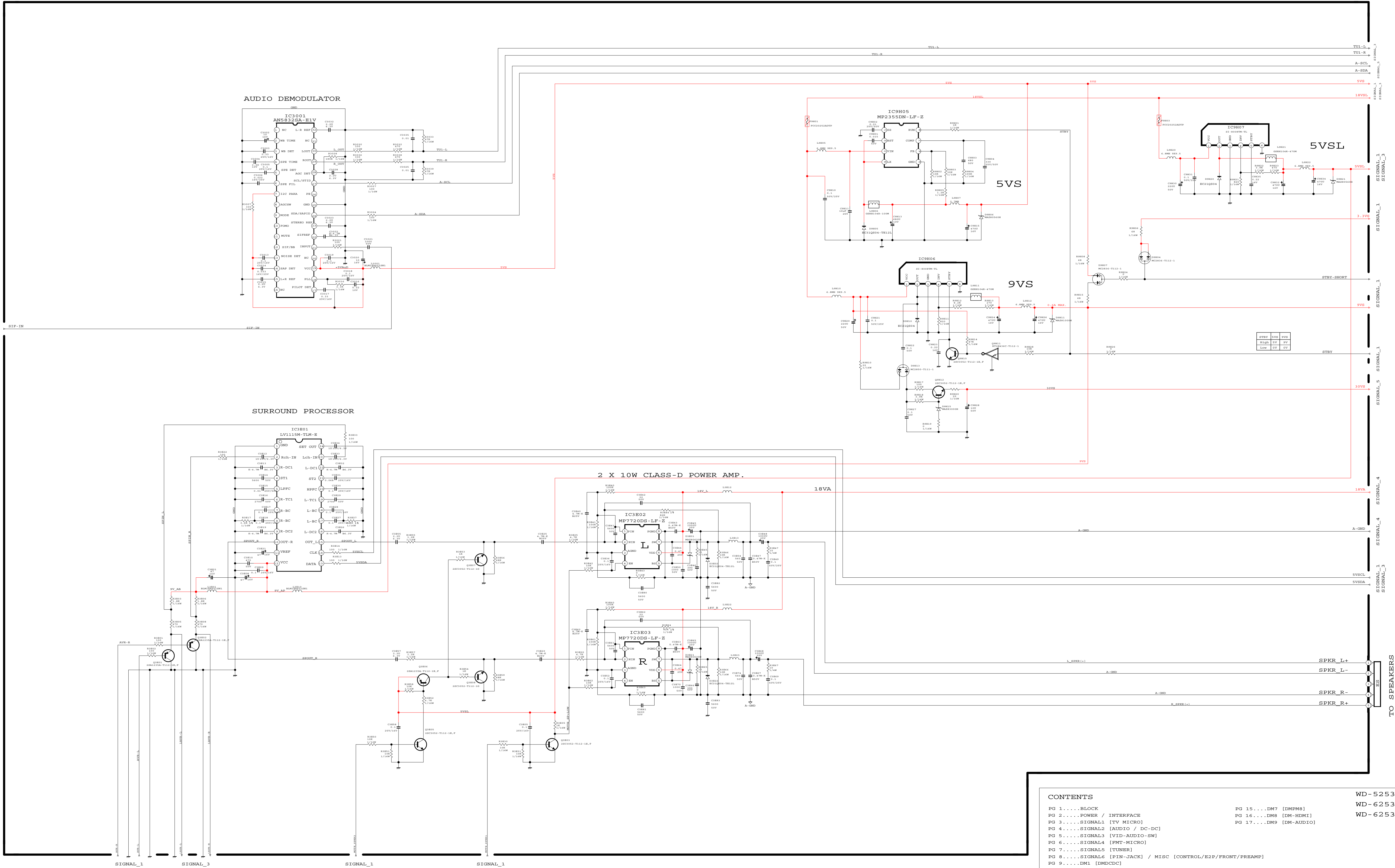


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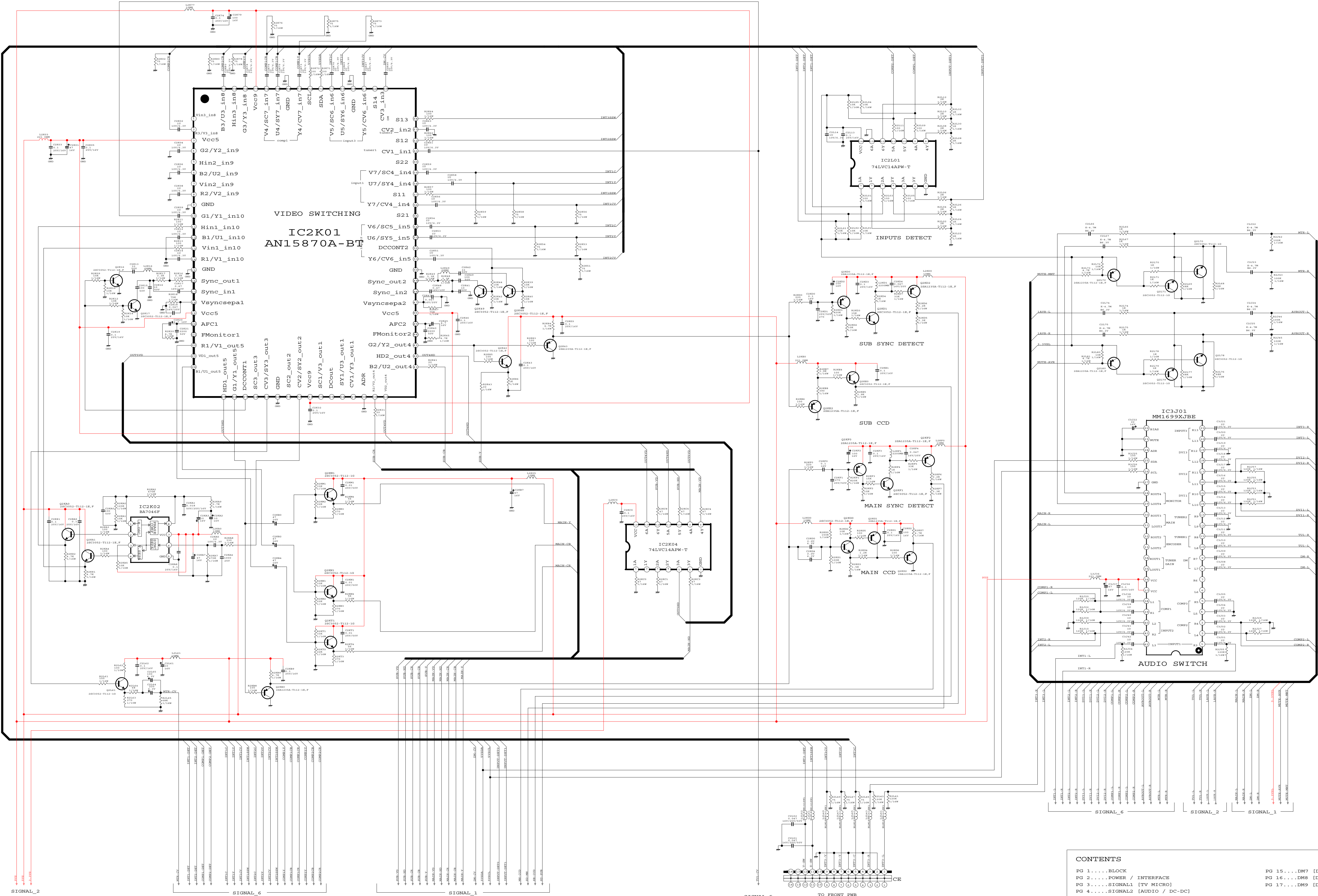
PG 1.....BLOCK
PG 2.....POWER / INTERFACE
PG 3.....SIGNAL1 [TV MICRO]
PG 4.....SIGNAL2 [AUDIO / DC-DC]
PG 5.....SIGNAL3 [VID-AUDIO-SW]
PG 6.....SIGNAL4 [FMT-MICRO]
PG 7.....SIGNAL5 [TUNER]
PG 8.....SIGNAL6 [PIN-JACK] / MISC [CONTROL/E2P/FRONT/PREAMP]
PG 9.....DM1 [DMDCDC]
PG 10....DM2 [DMCORE]
PG 11....DM3 [DMMEMA/DC]
PG 12....DM4 [DMMEMB/USB]
PG 13....DM5 [DMROM/AV]
PG 14....DM6 [DMADC-DVI]

PG 15....DM7 [DMPM8]
PG 16....DM8 [DM-HDMI]
PG 17....DM9 [DM-AUDIO]

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WD-62531 V32
WD-62530 V32L



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PG 2.....POWER / INTERFACE		PG 16....DM8 [DM-HDMI]	WD-62530 V32L
PG 3.....SIGNAL1 [TV MICRO]		PG 17....DM9 [DM-AUDIO]	
PG 4.....SIGNAL2 [AUDIO / DC-DC]			
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PG 6.....SIGNAL4 [FMT-MICRO]			
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PG 8.....SIGNAL6 [PIN-JACK] / MISC [CONTROL/B2P/FRONT/PREAMP]			
PG 9.....DM1 [DMDCDC]			
PG 10....DM2 [DMCORE]			
PG 11....DM3 [DMMEMA/DC]			
PG 12....DM4 [DMMEMB/USB]			
PG 13....DM5 [DMROM/AV]			
PG 14....DM6 [DMADC-DVI]			



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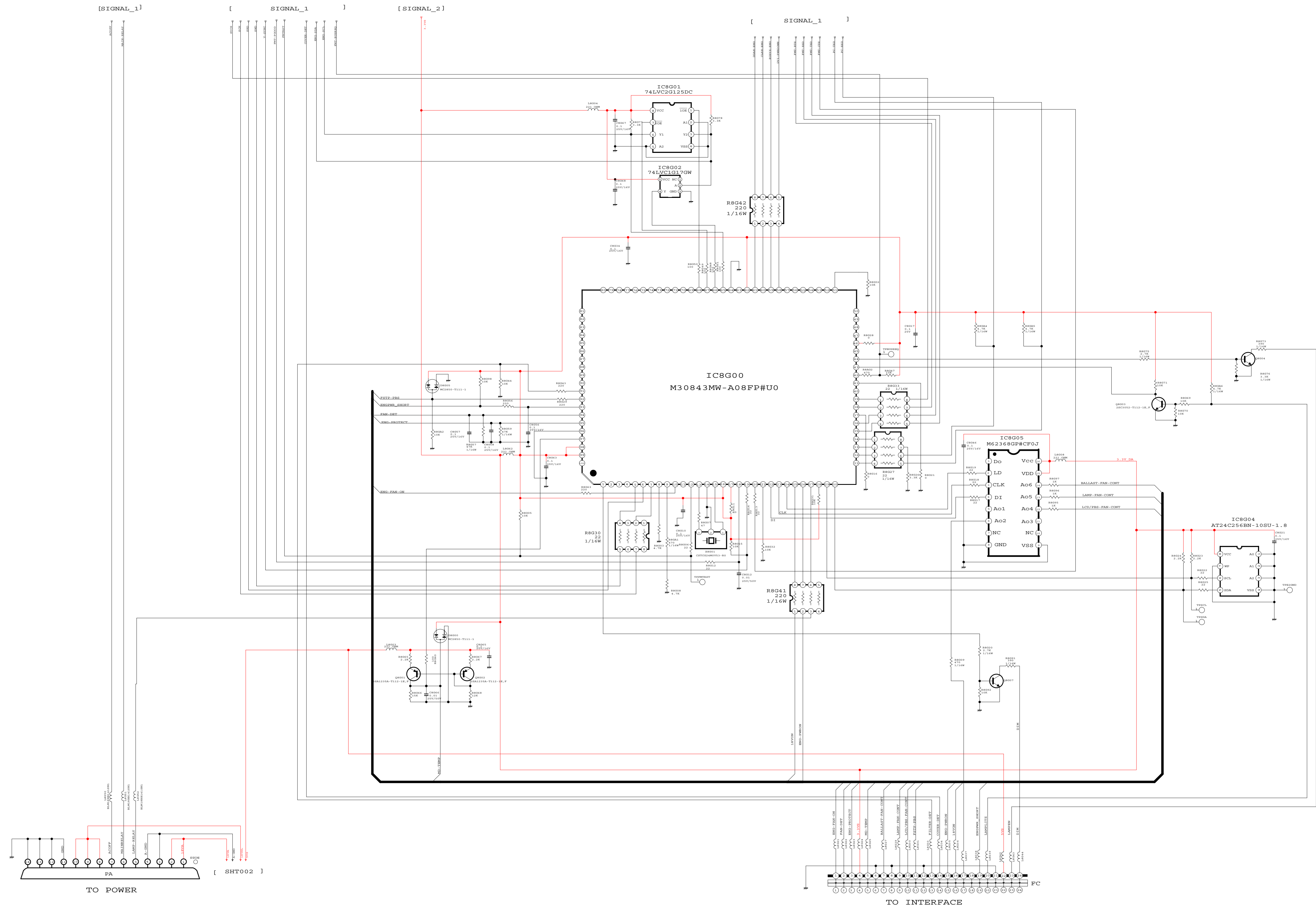
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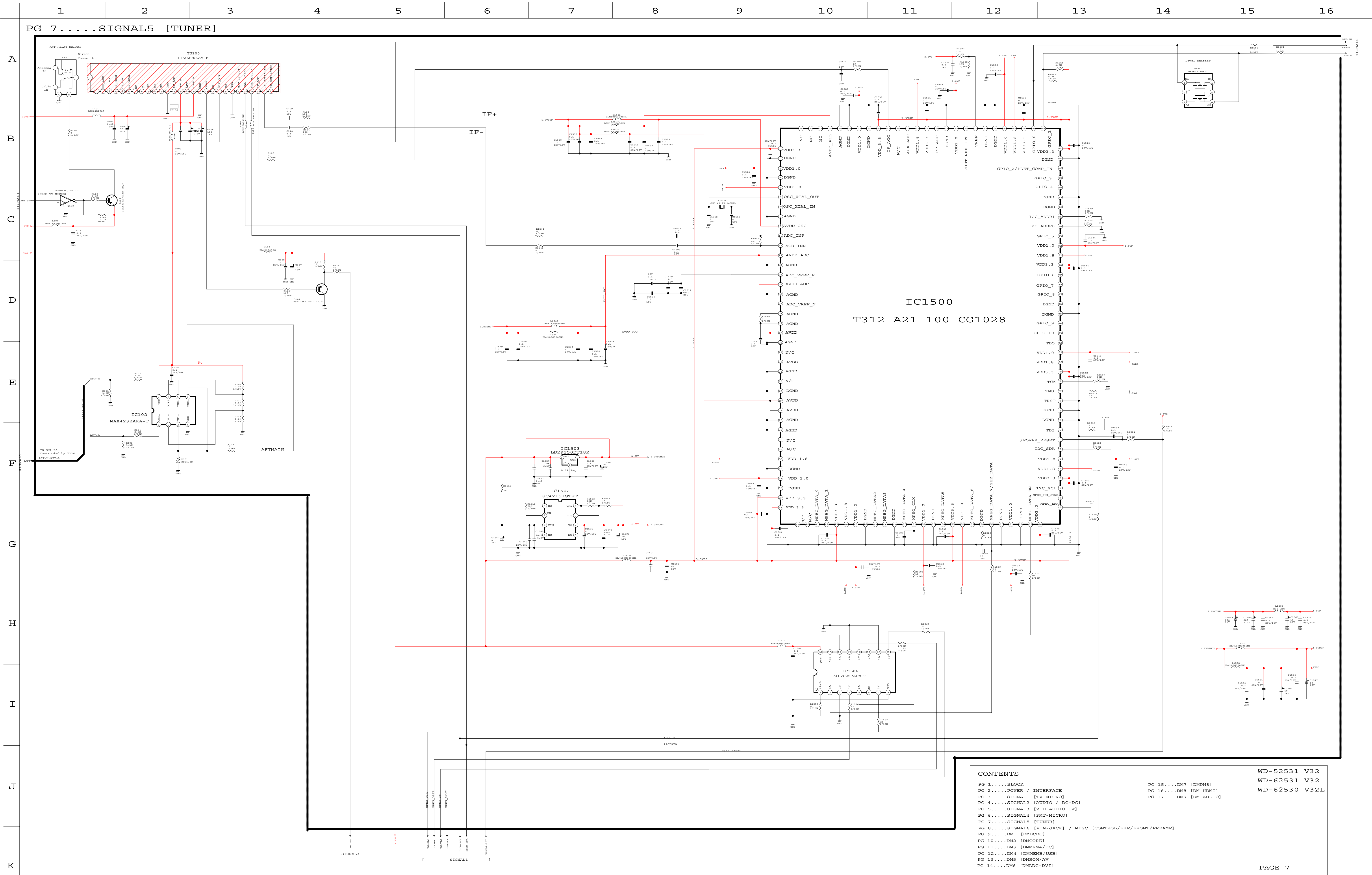
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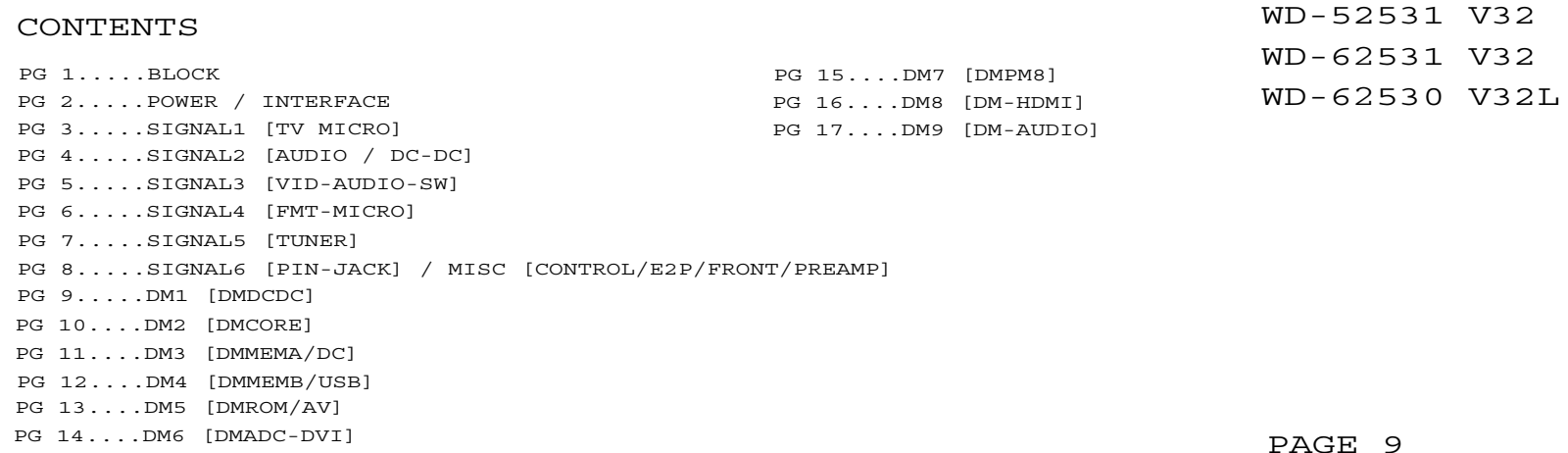
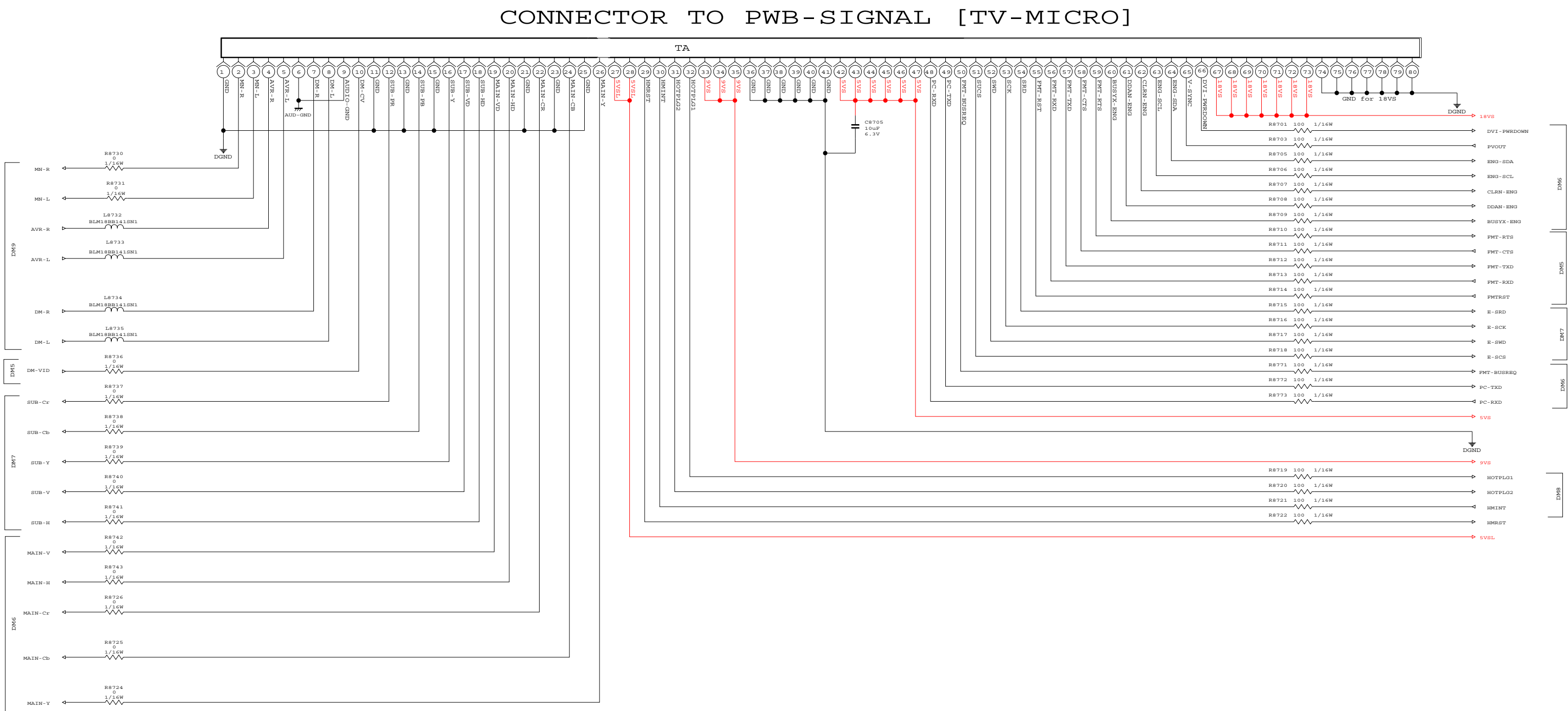
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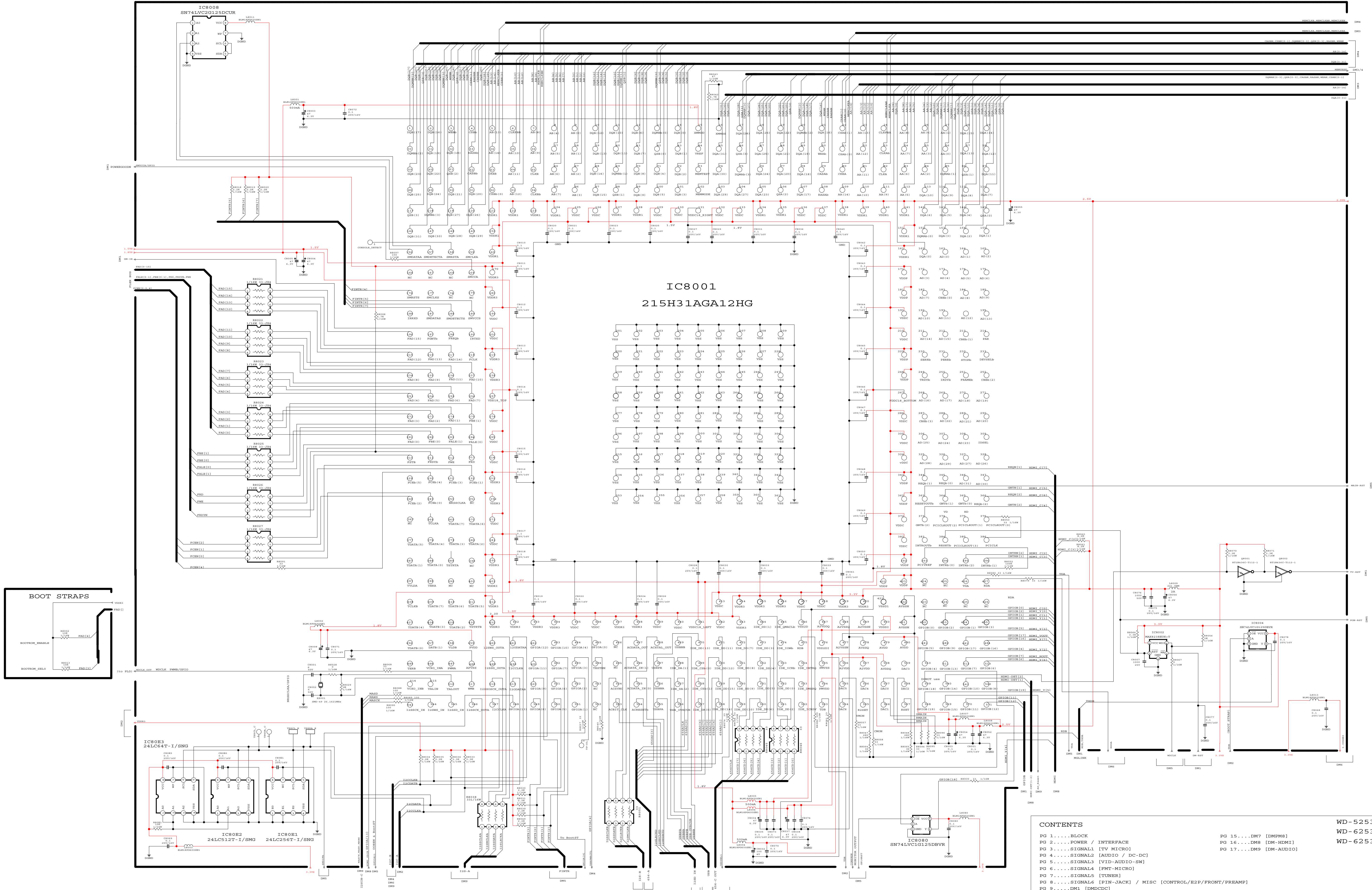
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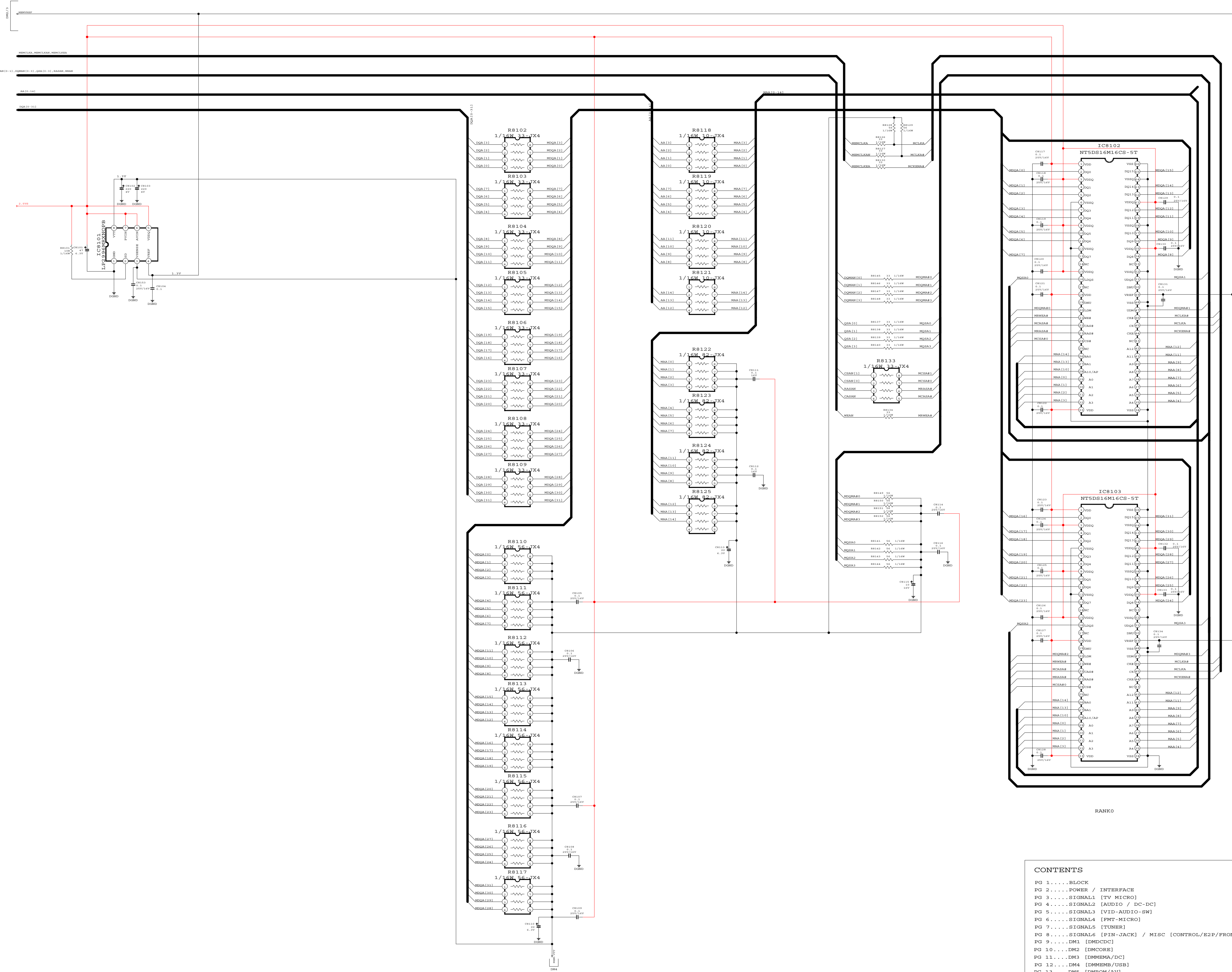






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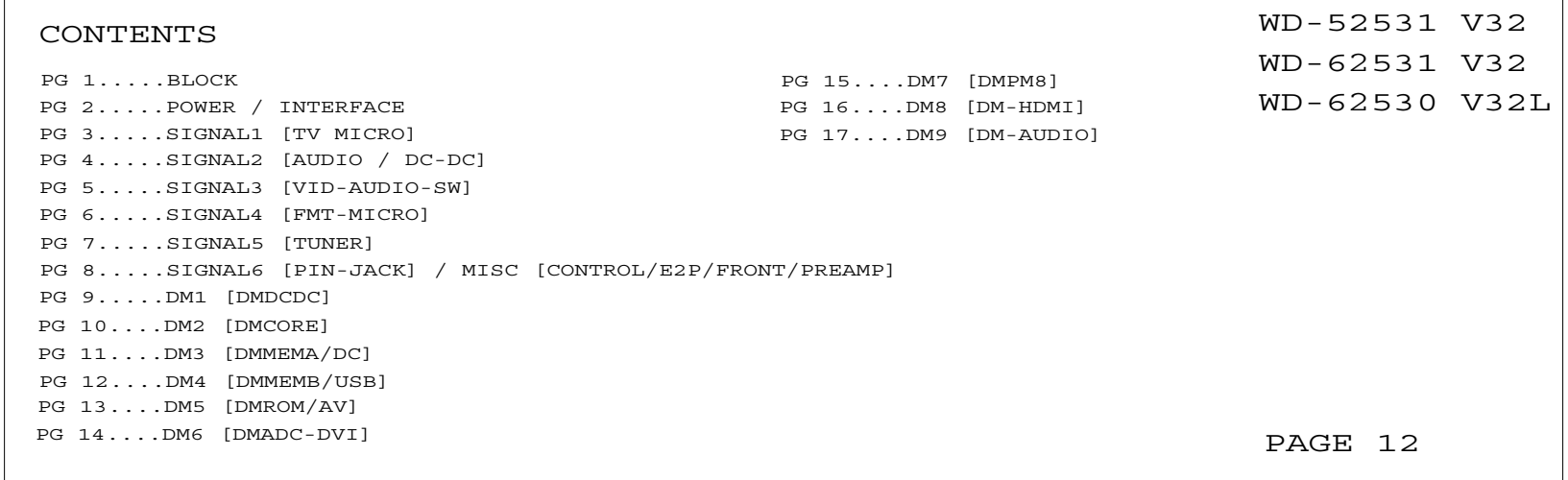
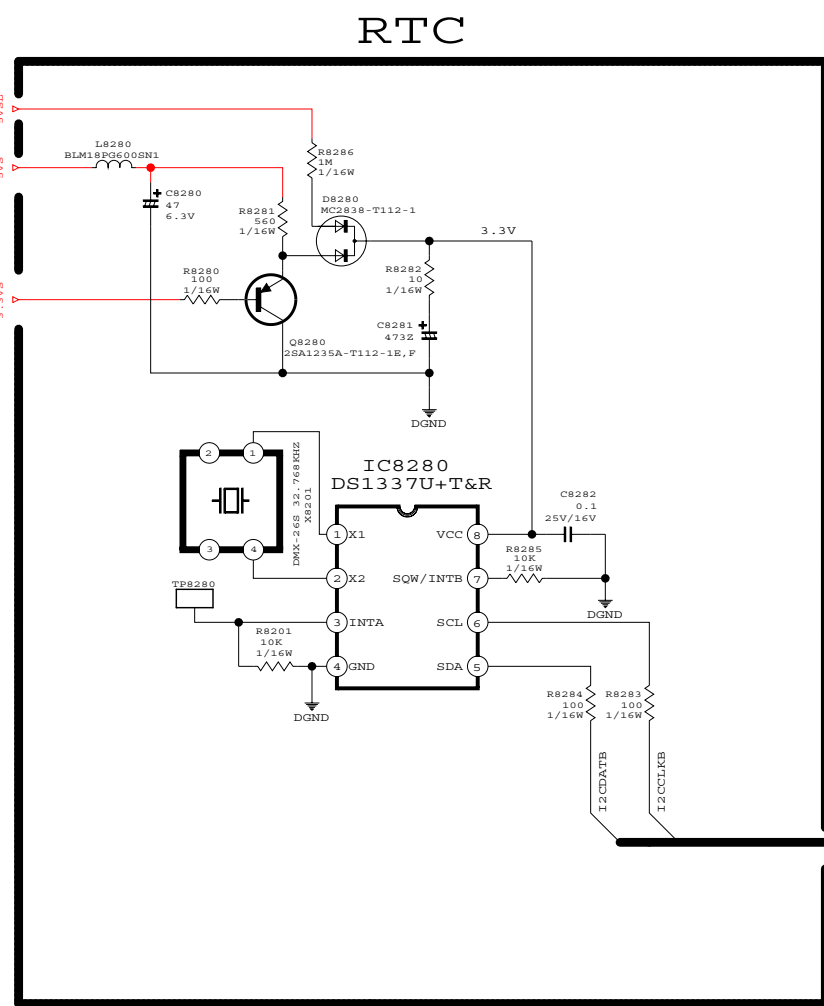
RANKO

CONTENTS

PG 1....BLOCK
PG 2....POWER / INTERFACE
PG 3....SIGNAL1 [TV MICRO]
PG 4....SIGNAL2 [AUDIO / DC-DC]
PG 5....SIGNAL3 [VID-AUDIO-SW]
PG 6....SIGNAL4 [FMT-MICRO]
PG 7....SIGNAL5 [TUNER]
PG 8....SIGNAL6 [PIN-JACK] / MISC [CONTROL/E2P/FRONT/PREAMP]
PG 9....DM1 [DMDCDC]
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PG 13....DM5 [DMROM/AV]
PG 14....DM6 [DMADC-DVI]

PG 15....DM7 [DMPM8]
PG 16....DM8 [DM-HDMI]
PG 17....DM9 [DM-AUDIO]

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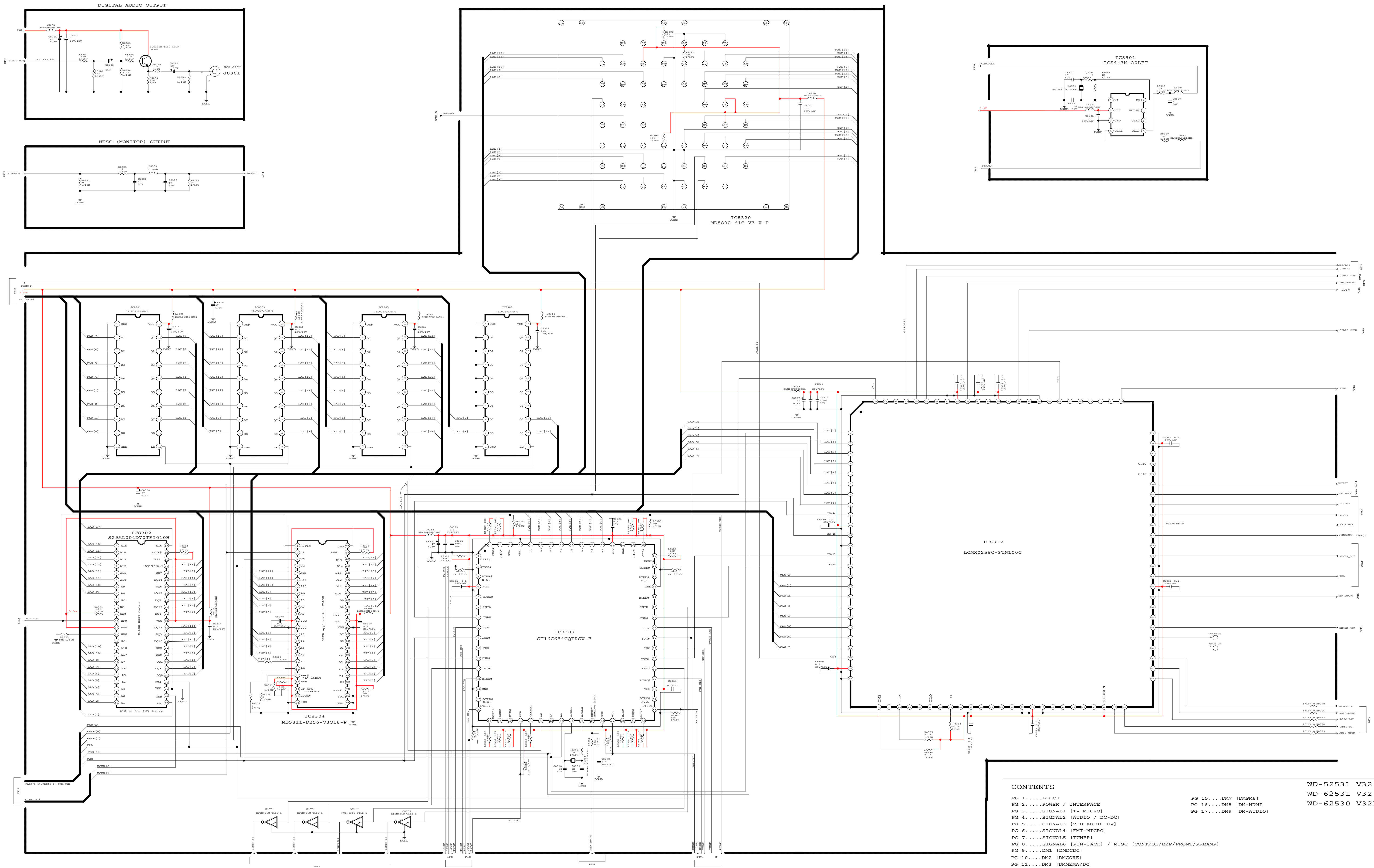
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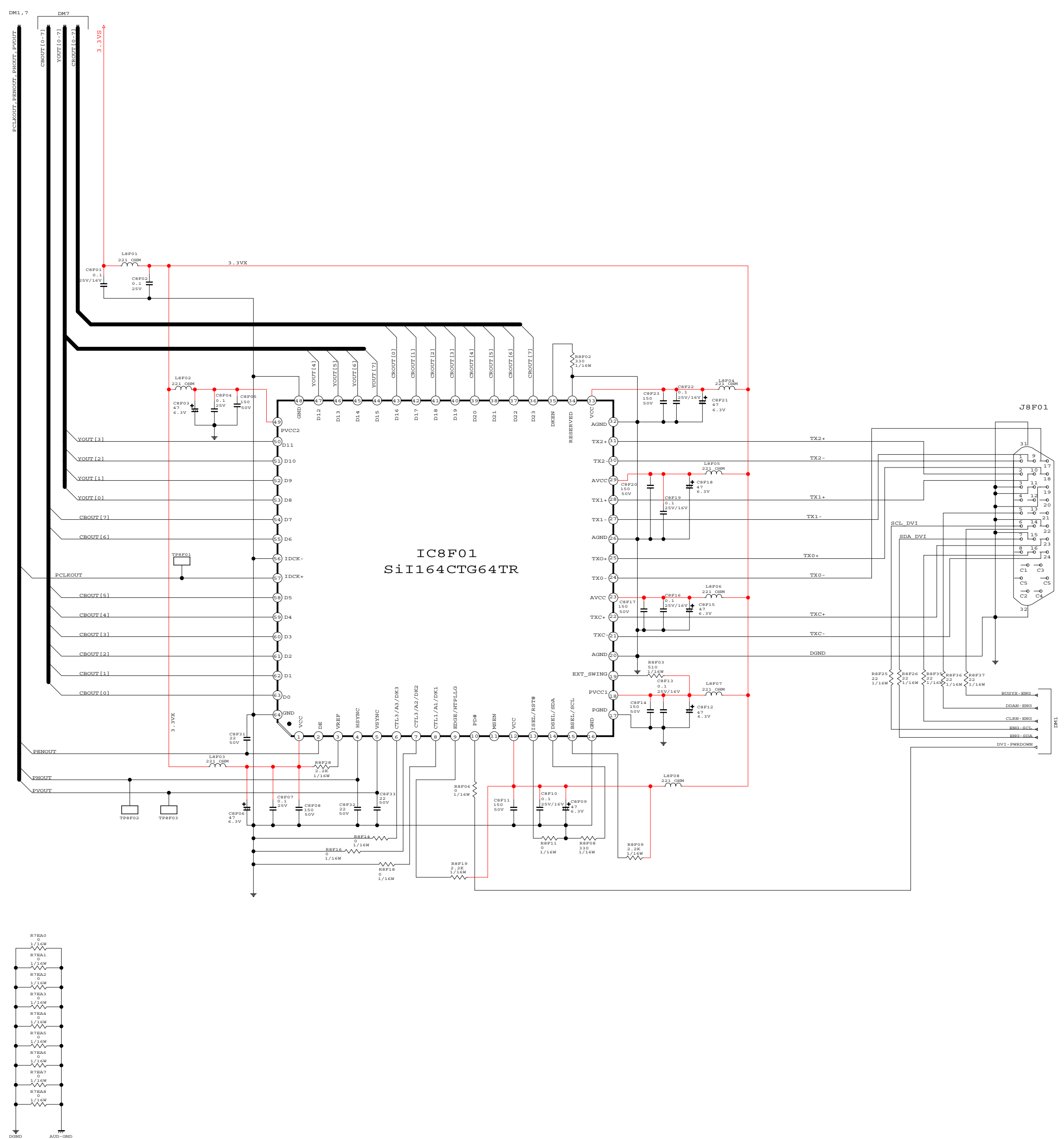
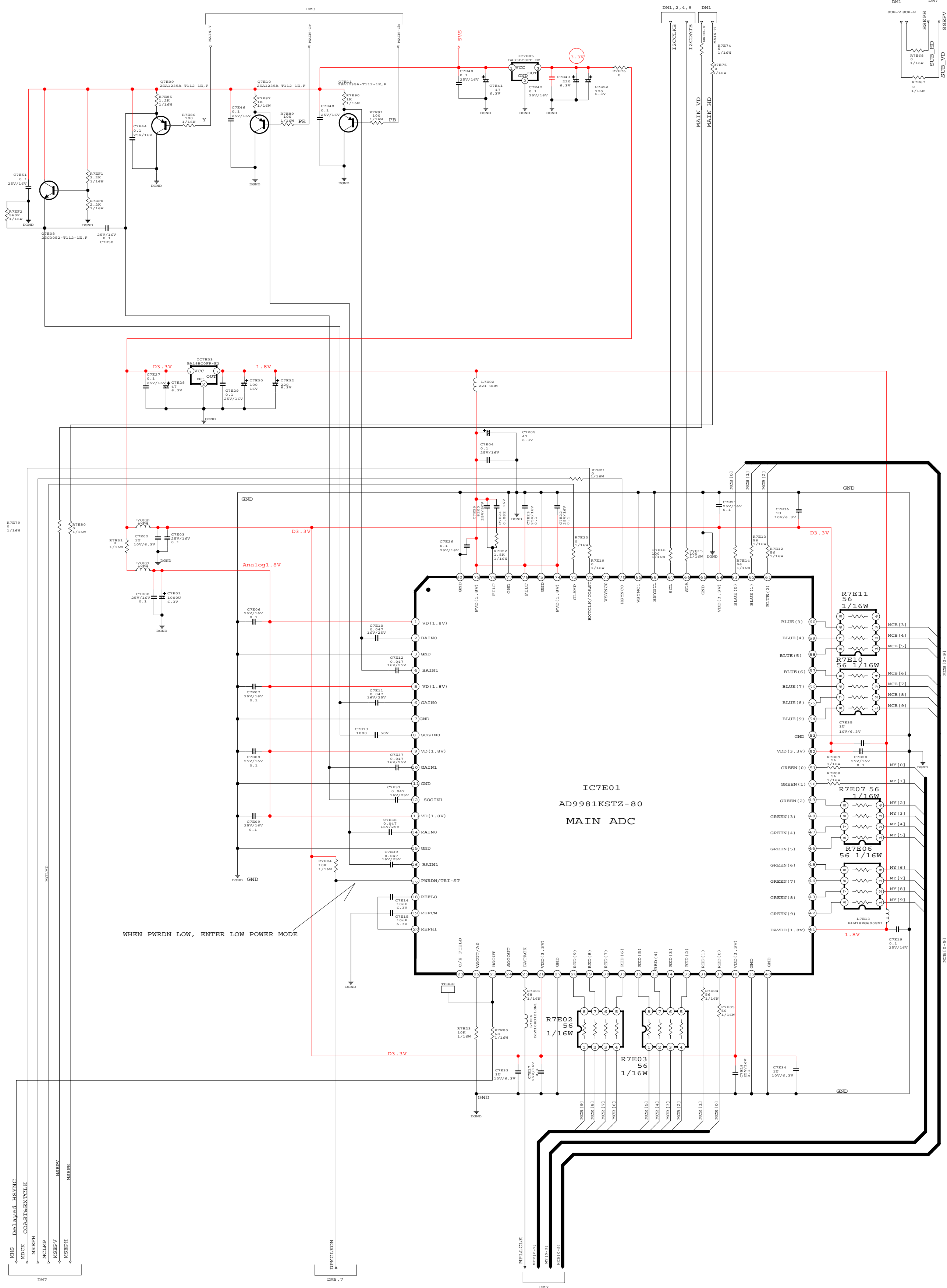


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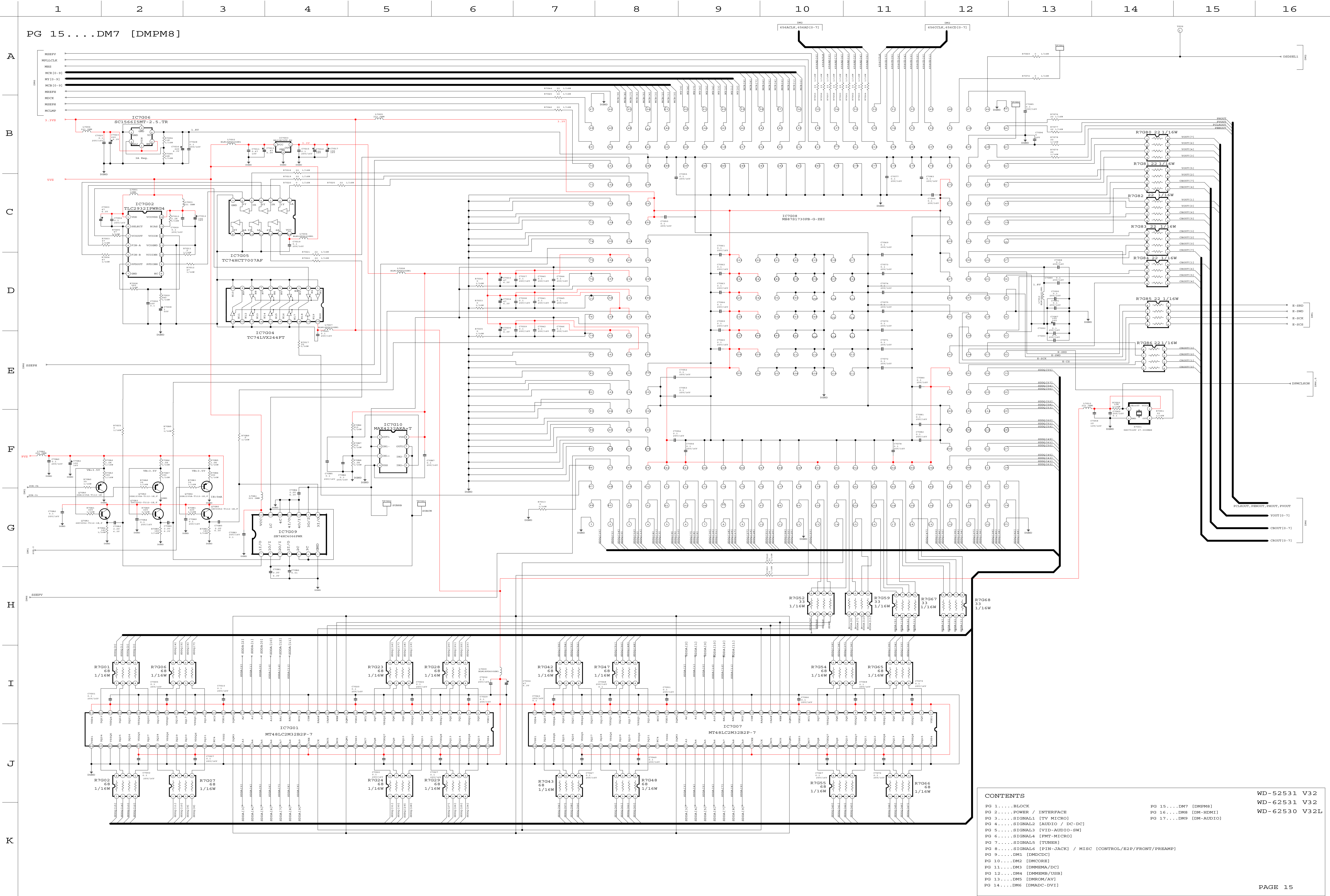
PG 1 BLOCK
PG 2 POWER / INTERFACE
PG 3 SIGNAL1 [TV MICRO]
PG 4 SIGNAL2 [AUDIO / DC-DC]
PG 5 SIGNAL3 [VID-AUDIO-SW]
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PG 8 SIGNAL6 [PIN-JACK] / MISC [CONTROL/E2P/FRONT/PREAMP]
PG 9 DM1 [DMDCDC]
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PG 16 . . . DM8 [DM-HDMI]
PG 17 . . . DM9 [DM-AUDIO]

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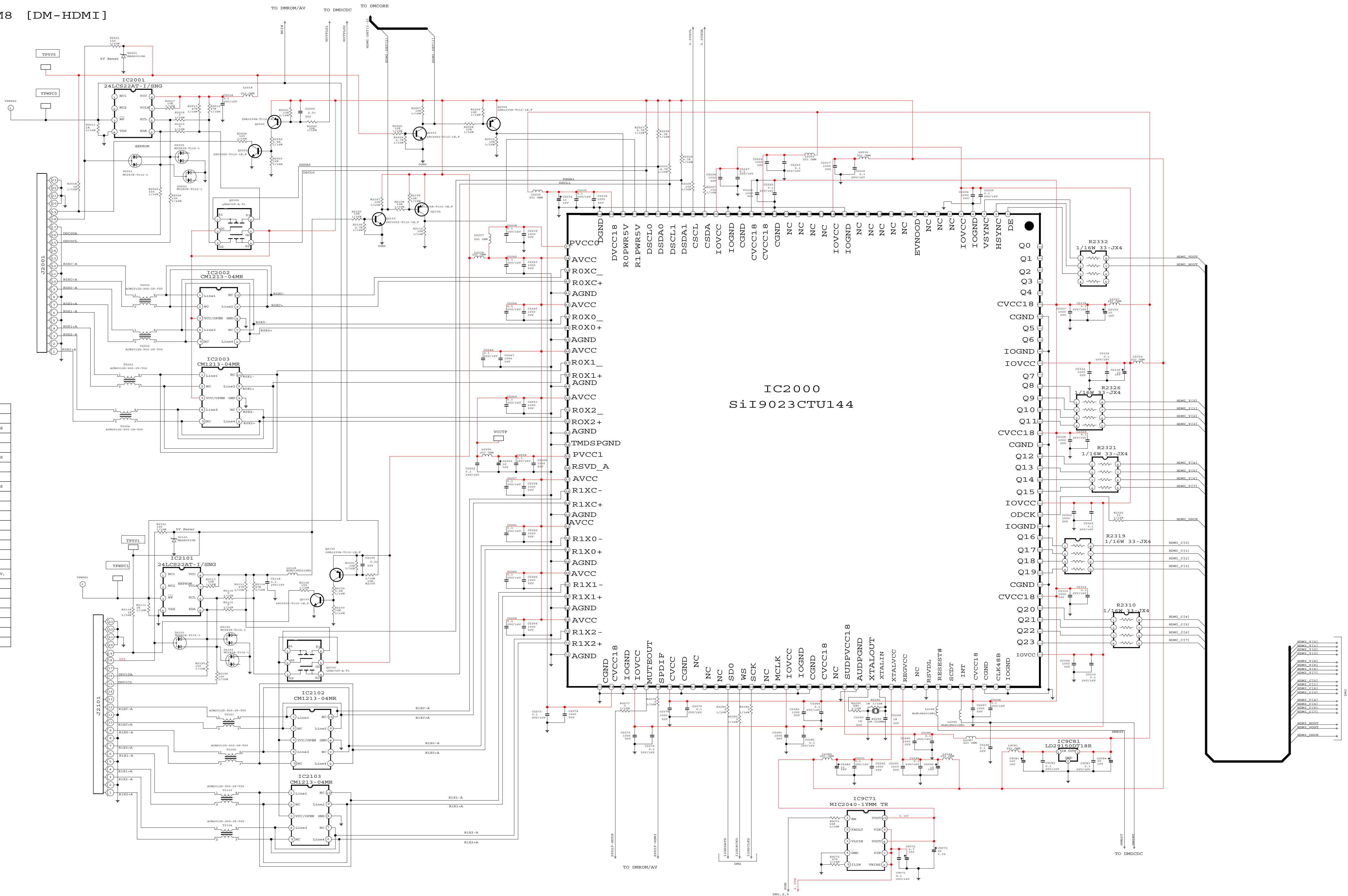


CONTENTS			WD-52531 V32
PG 1....BLOCK			WD-62531 V32
PG 2....POWER / INTERFACE	PG 15....DM7 [DMPW8]		WD-62530 V32L
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PG 4....SIGNAL2 [AUDIO / DC-DC]	PG 17....DM9 [DM-AUDIO]		
PG 5....SIGNAL3 [VID-AUDIO-SW]			
PG 6....SIGNAL4 [FWP-MICRO]			
PG 7....SIGNAL5 [TUNER]			
PG 8....SIGNAL6 [PIN-JACK] / MISC [CONTROL/E2P/FRONT/PREAMP]			
PG 9....DM1 [DMCDC]			
PG 10....DM2 [DMCORE]			
PG 11....DM3 [DMMEMA/DC]			
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PG 13....DM5 [DMROM/AV]			
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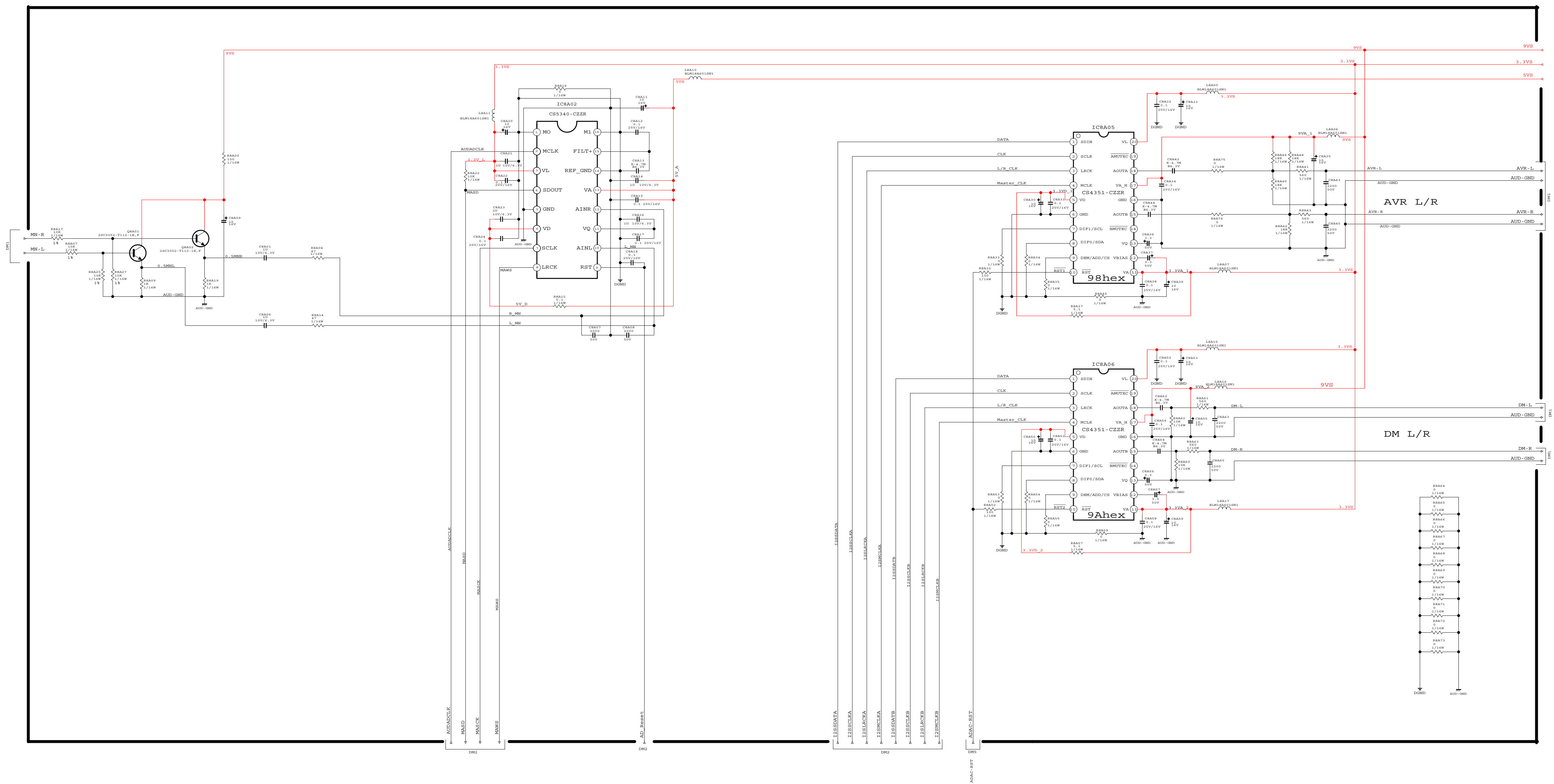
CONTENTS		
PG 1....BLOCK	PG 15....DM7 [DMPM8]	WD-52531 V32
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PG 12....DM4 [DMMEMB/USB]		
PG 13....DM5 [DMROM/AV]		
PG 14....DM6 [DMADC-DVI]		

PIN	Signal Assignment
1	T.M.D.S. Data 2+
2	T.M.D.S. Data 2 Shield
3	T.M.D.S. Data 2-
4	T.M.D.S. Data 1+
5	T.M.D.S. Data 1 Shield
6	T.M.D.S. Data 1-
7	T.M.D.S. Data 0+
8	T.M.D.S. Data 0 Shield
9	T.M.D.S. Data 0-
10	T.M.D.S. Clock+
11	T.M.D.S. Clock Shield
12	T.M.D.S. Clock-
13	CRC
14	Reserve
15	DDC Clock
16	DDC Data
17	Ground (return for +5V)
18	+5V Power
19	Hot Plug Detect
Shell	FG
(20)	Location Post (GND)
(21)	Location Post (GND)
(22)	Location Post (GND)
(23)	Location Post (GND)



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PG 1....BLOCK	PG 15....DM7 [DMPM8]	WD-62531 V32
PG 2....POWER / INTERFACE	PG 16....DM8 [DM-HDMI]	WD-62530 V32L
PG 3....SIGNAL1 [TV MICRO]	PG 17....DM9 [DM-AUDIO]	
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PG 17...DM9 [DM-AUDIO]



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PG 3.....SIGNAL1 [TV WIFERO]	PG 17.....DM9 [DM-AUDIO]		
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